

# small air forces observer

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October 2016

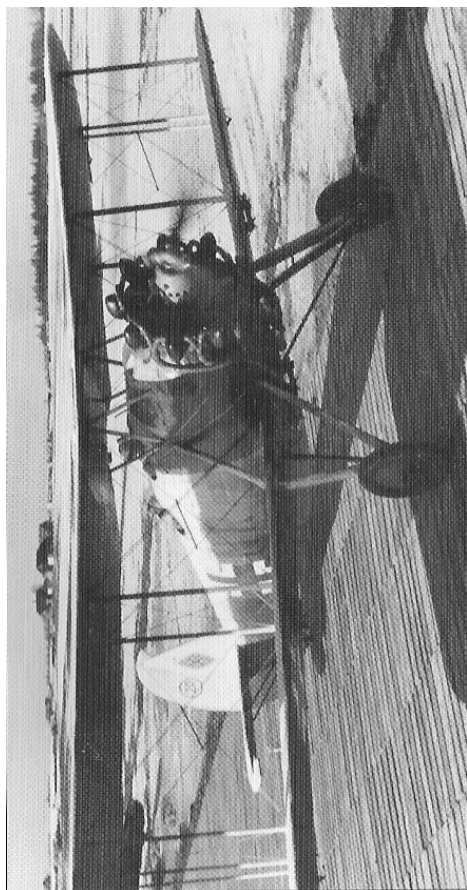
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**ISAF: Multinational Aviation in Afghanistan (2001-2014)**  
**The Baltic Republics: Aircraft in Profiles**  
**Estonian "air force" in WW2**  
**Fiat CR.20: Part 1 Italy**  
**Exotic Birds 8**

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The first real combat aircraft provided to the Estonian "air force" were 30 Heinkel He 50 T biplane dive-bombers, also acquired from storage at Pillau-Neutief. The first arrived in June 1943 and allowing the establishment of a two-squadron "night assault group" [NSGr 11 (est)] to fly nocturnal harassment sorties against Soviet frontlines, troop encampments and airfields. (Author's Collection)



A month prior, the Estonian "air force" received four obsolete Heinkel He 50 T training biplanes from Luftwaffe's research facility at Travemünde to begin training for their night harassment missions before the arrival of the 30 operational examples recovered from storage. Aircraft GN-NK sits immediately behind the seven student aviators. (Frits Gerdessen Collection)



As attrition reduced the numbers of operational He 50s on strength, NSGr 11 was reinforced with Arado Ar 66s and Fokker C.5es. When orders were received to evacuate Estonia, Fokker 3W+OS was flown to Tallinn-Ülemiste where it developed a malfunction and had to be abandoned, subsequently becoming one of four NSGr 11 C.5es captured by the Soviets. (Frits Gerdessen Collection)



Returning from night bombing operations on 29 August 1944, Oblt Georg Poolma landed his C.5e atop an Ar 66 that had not cleared the landing path at Kärevere airfield, wrecking both aircraft. Others flying that night diverted to Adavere where, in the darkness at that unfamiliar field, one of them ran into two other C.5es, resulting in the destruction of all three. (Frits Gerdessen Collection)

# SMALL AIR FORCES OBSERVER

The Journal of the Small Air Forces Clearinghouse

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**The Sydney Award.** This is given each quarter to a member who has consistently provided excellent articles for publication in SAFO. The awards consists of a one-year subscription to SAFO and is funded from the Richard E. Cross and Naidene Denton Cross Memorial Fund. The honoree this quarter is Ted Koppel (#118) who has been contributing artwork beginning with the cover of Vol. 1, No. 2 (April 1975). The first part of his monumental study of the aviation components of the multinational mission to Afghanistan appears in this issue of SAFO.

**COVER COMMENTS:** In June 1943, Estonian "air force" began receiving the first of 30 otherwise obsolete Heinkel He 50 T biplane dive-bombers to begin training for their newly assigned night harassment missions. Some of the first pilots undergoing this training were (LtoR) Uno Polikarpus, Harry Habel, Karl Lumi, Ants Piirsalu, Raoul Mardiat, Jüri Kukku, Jüri Ester. (Frits Gerdessen Collection)

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(APMA, PO Box 51, Strathfield, NSW 2135; 4 issues airmail A\$40. International payment is best handled via Paypal at [iansharyn@bigpond.com.au](mailto:iansharyn@bigpond.com.au)). Web Site: [www.apma.org](http://www.apma.org). All articles have b&w or color photos and excellent scale drawings.

**2/2016** (28 page) "Breguet XIX" 3 pages including kit reviews, 6 color photos of a XIX in a Spanish museum, and 4 color profiles of Spanish XIXs. "Italian Aircraft Colour" 3 pages including 7 photos. Non-aviation articles are: "Danube River Gunboat", "Bren Gun Carrier" Story – Part 2" "Mekong Monitors – Part 1", Croatian Navy", and "Wasp IIC Flamethrower"

**3/2016** ( pages) "Aircraft at the Movies – Part 1)" 3 pages including 2 color profiles (RAF Polish Spitfires). "Furthest Spitfire" one-page with 3-view drawing of Argentine Spitfire 'LV-NMZ'. "Caged Fury" 8 pages on building a 1/48-scale diorama of the Sea Fury on display at the Commonwealth Experimental Building Station. "Handley Page Halifax C.VIII – Halton Update" 2 pages including 4 b&w profile drawings "Boomerang Photos" 2 pages with 8 photo of museum Boomerang. "Photo-Reconnaissance Spitfire – Part 1" one page on converting

a model of the Spitfire I into a I PR C or E. Non-aviation articles are "Dioramas in 1/72<sup>nd</sup> Scale", Photographs: Sinking of HMAS Australia & knocked out Matildas at Mangga Besar", and "KV-1 Model 1942 at Pansar Museo, Parola, Finland."

### **AUSTRIA**

**OFH NACHRICHTEN** (Oesterrichische Flugzug Historiker, Pfenninggeldf 18/2/14, A-1160 Wien.

**2/16** (44 pages) "Flying Bulls Alpha Jet" 9 pages inc. 10 b&w photos, 3 color photos, 4 color profiles, and a table listing all eight aircraft. "Junkers F 13-Nachbau" 2 pages inc. 5 photos of museum aircraft. "Beech T-34 Prototyp zu haben" 1½ pages inc. 5 photos of 'OE-CCW'.

### **FRANCE**

**AIR MAGAZINE:** Artipresse, 119 rue Anatole France, 93170 Bagnolet, France. Six issues a year. 55 euros in France, 60 euros in Europe, 80 euros for the rest of the world. Email: [artipresse@yahoo.fr](mailto:artipresse@yahoo.fr).

**#63 Janvier-Fevrier-Mars 2015** (80 pages)

**AVIONS:** Toute l'Aeronautique et son Histoire (Lela Presse, 29 rue Paul Bert, 62230 Outreau, France. 71 euro for 6 issues). Website: [www.avions-bateaux.com](http://www.avions-bateaux.com). E-mail: [contact@avions-bateaux.com](mailto:contact@avions-bateaux.com)

**#212 Juillet/Aout 2016** (94 pages) "La libération de la Corse" 20 pages including 33 photos, 6 color profiles (Wellington, Spitfire V, Bf 109G, Me 323, Do 217K w/ Hs 293, & P-38G), and one map. "Le Dr Ernst Kupfer, un as méconnu des Stuka" 9 pages including 18 photos and 2 color profiles (Ju 87D). "Le Grumman F6F Hellcat dans la Seconde mondiale (2<sup>e</sup> partie)" 15 pages mostly on technical details including 5 photos of aircraft, 8 photos of interior details, and a 2-page 1/72-scale multi-view drawing of F6F-3, a cut-a-way drawing of F6F-5N, and numerous sketches from instruction manuals. "Tigres volants sur la jungle: La saga du 26<sup>th</sup> FS/51<sup>st</sup> FG 'China Blitzers' (2<sup>e</sup> partie)" 12 pages including 23 photos, 4 color profiles [P-40N, P-51B (3)], and map. "L'odyssée du Bloch 200 n° 6 des FAFL" 8 pages including 8 photos, 2 color profiles, and map of the route of N°6 from Rayack, Lebanon to Casablanca, Morocco and back to Ben Gardane, Tunisia in 1944. "Dogfight sur la Meuse: l'escadrille N 3 à Verdun, février-mai 1916 (fin)" 13 pages including 23 photos and 6 color profiles [Nieuport XI (3) & Nieuport XVI (3)]. "Romano 82, le voltigeur de l'Armée de l'Air; 2<sup>e</sup> partie: dans la guerre d'Espagne" 12 pages including 21 photos and 3 color profiles of Ro 82/83 in Spanish colors.

## **-letters-letters-letters-letters-letters-letters-letters-letters-letters-letters-**

"The AAMA (Association Friends of the Aeronautical Museum - Uruguay) has recommenced activity on the Tiger Moth. The team has created a very good 'turtle deck'. Since it was not possible to obtain the appropriate timber in the local market, a material that replaces the original wood was used. Ceconite has been used as covering. We used plans kindly provided by the HARS Australian association.

"Following the recently finished Curtiss Falcon, the AAMA will turn to two new projects: the Tiger Moth (fully AAMA) and the B-25J (with the help of the FAU). The Mitchell is the former FAB 5087, donated to the Museum by the Government of Brazil in 1976.

Unfortunately, all FAU B-25s were scrapped in mid sixties."  
Eduardo Luzardo (#1383), Uruguay.

"Some small air forces related news from my end:

- Our third Junkers book is nearing completion: <http://z-bok.se/catalog.25.html>

- I have participated in a good general book on the Swedish Air Force during the Cold War, which has just been published: <http://z-bok.se/catalog.26.html>

- At the moment I am waiting for the delivery from the printers of this book: <http://z-bok.se/catalog.23.html>

- In addition I am preparing a booklet on aviation in South China/Canton until 1927, but that subject is so narrow that I

have decided to make an e-book of it and distribute the few copies that there is a market for electronically."

Lennart Andersson (#68), Sweden.

"I had been looking for the camouflage and marking details of a CAF B-25 (photo attached) for many years but to no avail. Any help from SAFO members would be greatly appreciated. Send replies to [saf0@redshift.com](mailto:saf0@redshift.com)."

D Y Louie (#544), USA.





# The Estonian “air force” in World War II

Douglas C. Dildy

The initial incarnation of the Estonian “air force” – the army’s *Lennuväe Rügement* (*LvRgt* or “Aviation Regiment”, established in 21 November 1918) ended with the Soviet Union’s occupation of the small Baltic seacoast nation on 17 June 1940. Estonia was incorporated into the USSR and three weeks later (6 August 1940) and its small military became the Red Army’s 22<sup>nd</sup> Territorial Corps, with the Estonian air arm becoming the corps’ “22<sup>nd</sup> Aircraft Squadron”, but only a handful of Hawker Hart biplanes, Henschel Hs 126B army observation aircraft, and an Avro Anson twin-engine light transport/maritime patrol plane were retained.

When Hitler’s Wehrmacht invaded the USSR in June 1940, the rapid advance of *Heeresgruppe Nord* (Army Group North or AGN) resulted in the withdrawal of the 22<sup>nd</sup> Corps and the aircraft squadron, which evacuated its Henschels and the Anson (which crashed with the loss of all aboard) – all other Estonian military aircraft, including trainers, were burned and destroyed. Some 40 pilots took advantage of the ensuing confusion to slip away to join the *Metsävennad* (“Forest Brothers”) guerrilla band, mounting harassing attacks against the retiring Red Army units. Tallinn, the capital, was “liberated” by the Nazis on 28 August 1941.

The rebirth of the Estonian “air force” began with “Sonderstaffel Buschmann” (SB or “Special Squadron Buschmann”) a “private” police coastal patrol unit established by Gerhard Buschmann, an ethnic German born in Tallinn and avid pre-war sports aviation pilot. Using the five surviving aircraft of the *Eesti Aeroklubi* (Estonian Aero Club) – four Estonian-built PTO-4 sport monoplanes and a Polish-made RWD-8 parasol-winged trainer – and former *LvRgt* pilots returning from the forests, Buschmann organized a militia/para-military “police” flying unit and started a concerted effort to obtain official authorization, all the while flying patrols along Estonia’s coasts. Operating under the auspices of the SS and with the informal endorsement of the *Kriegsmarine*’s (German Navy’s) *Kommandierender Admiral der Marinestation der Ostsee* (Commanding Admiral, Naval Bases Baltic Sea), Vice-Admiral Theodor Burchardi, Buschmann finally received official approval to establish the unit on 12 February 1942; its mission: coastal reconnaissance of the Gulf of Finland.

The SB was based at Ülemiste airfield, on the outskirts of Tallinn (called “Reval” by the Germans) and the shores of Lake Ülemiste, and the Germans soon

reinforced the unit with another RWD-8, a Miles Magister, a de Havilland DH.89 Dragon Rapide, and four Stampe SV.5 training biplanes, all former Latvian or Lithuanian aircraft. However, these unarmed aircraft – none of which even had a radio – were completely unsuited for military operations, so Buschmann soon scrounged 21 ancient, retired Heinkel He 60 single-engine float biplanes; they began arriving at Lake Ülemiste in July-August, 1942.

Buschmann also located the survivors of a dozen Arado Ar 95 A-1s built for Turkey in 1939. Originally developed as a ship-board reconnaissance/torpedo bomber and replacement for the He 60, 29 examples (including five prototypes) were produced. The type was initially rejected by the Luftwaffe because of its poor flying performance, so three pre-production examples (Ar 95 A-0s) went to Spain and the other nine were sold to Chile (See SAFO #116, Vol. 29/No. 4), but once war erupted in September 1939, the Turkish exports (Ar 95 A-1s) were confiscated by the Luftwaffe for use by 3. Staffel/Aufklärungsgruppe (See) 125 [abbreviated “3./AufklGr 125”; “reconnaissance group (sea)”]. During 1941 this unit patrolled the Baltic Sea, flying from Kiel-Holtenau; Helsinki, Finland; and Riga, Latvia. In November that year, the unit deployed to the Black Sea (Constanța, Romania, and Varna, Bulgaria) where it was re-equipped with BV 138 flying boats in March 1942, the 10 surviving Ar 95s being placed in storage at Pillau-Neutief airfield, located on the very end of the *Frische Nehrung* (“Vistula Spit”) near Königsberg, East Prussia (now Kaliningrad, Russia), until Buschmann acquired them a year later.

By this time the SB had grown to some 50 aircraft (including Ar 66, Bü 131, and Go 145 trainers) and 200 Estonian volunteers, and included its own workshop and flying school. Initially designated “Nachrichten und Verbindungs Fliegergruppe z.b.V” (“Communications and Liaison Flying Group for special Purposes”), in April 1943 the unit was accepted into the Luftwaffe “order of battle” as 16./AufklGr 127 (See).

With ten Ar 95 A-1s and 13 serviceable He 60s, the squadron’s primary task was monitoring the *Kriegsmarine*’s Gulf of Finland minefields for the *Führer der Minensuchverbände Ost* (“Leader of Minesweeping Formations Baltic”), but it actively participated in anti-submarine warfare (ASW) operations as well during the next two months.

Combating Soviet submarines in the murky waters of the Gulf of Finland was challenging, but on a number of occasions Estonian Ar 95 crews reported their quarry's locations or diving positions, allowing Burchardi's ASW warships to close on and bombard them with depth charges. From 21 May to 1 June, the German Baltic Sea Command claimed the destruction of five Soviet submarines and commended the squadron for its successful reconnaissance and timely reporting. (See Note 1)

### More Military Aircraft Available

Also in storage at Pillau, Buschmann discovered 50 Bf 109 Ts and 30 He 50 Ts. These were *Trägerflugzeug* ("carrier aircraft" – hence the "T" suffix to their designations) being stored by the *Kriegsmarine* for its uncompleted aircraft carrier *Graf Zeppelin*, then anchored in an estuary at Stettin (now Poland's Szczecin), the Bf 109 Ts being E-model ("Emils") modified with longer, glider-like wings, catapult attach points, pilot dinghy, and other equipment for overwater operations. The He 50 Ts were sturdy two-seat biplanes, originally designed as carrier-based dive-bombers for the Imperial Japanese Navy (which had 590 produced under license by Aichi as the D1A1 and D1A2). Nicknamed "*der erste Stuka*" ("the first Stuka"), 60 had been produced for the Luftwaffe to develop dive-bombing techniques and tactics, and later (along with 12 built for China commandeered by the Luftwaffe in 1939) served as dive-bombing trainers once the dreaded Ju 87 (the real "Stuka") arrived. By 1940 the remaining He 50s were surplus to the Luftwaffe's needs and were passed to the *Kriegsmarine* as carrier-qualification trainers. Since the *Graf Zeppelin* was ordered into storage status that July – awaiting the outcome of the western campaign and the hoped-for "end of the war" – the carrier's aircraft (which also included 12 Fi 167 A-0 torpedo bombers and a handful of other types) were stored at Pillau.

However, Hitler's war did not end with the conquest of France and the Low Countries, or the subsequent invasion of the USSR, and by 1942 the Wehrmacht was mired in the vast expanse of Russia and the USA's Eighth Air Force was beginning to pound the Third Reich's war industries. On 30 January 1943, Hitler ordered all the *Kriegsmarine*'s heavy ships scrapped, spelling the end of the *Graf Zeppelin* saga and making the carrier's aircraft stored at Pillau available for other uses. Buschmann requested the Bf 109 Ts for his expanding "Estonian air force", but was denied – these were needed to combat the American B-17s and B-24s

savaging the Reich's industries (they were used to form a fighter unit stationed on the small island of Heligoland-Düne in the German Bight).

The Luftwaffe had little use for the obsolete biplane dive-bombers, however, except as night light-attack raiders. The Soviet tactical air force (*Voyenno-Vozdushnye Sily*, literally "Military Air Forces") had effectively used nocturnal nuisance air raids by Polikarpov U-2VS (later Po-2LSH – see SAFO #141, Vol. 36/No. 1) biplanes to deny German soldiers sleep and undermine their morale. Consequently the *Oberkommando der Luftwaffe* (OKL or Supreme Headquarters of the Air Force) staff had come to appreciate the value of night-time harassment attacks and on 7 October 1942 authorized *Luftflotten* ("air fleets") commanders on the Eastern Front to form several *Nachtschlachtgruppen* ("night assault groups" or NSGr). By February the next year, from the Baltic to the Black Seas the Luftwaffe had established four such groups – with a total of 17 squadrons – flying a motley assortment of some 238 obsolete trainers and light communications aircraft as night light-bombers.

As slow biplanes with short landing performance, the He 50s were well suited for night operations but due to the continual attrition on the Eastern Front – to say nothing of fighter pilot losses in other theaters – the Luftwaffe lacked pilots and flight crewmen to form additional units. Buschmann had pilots, but needed aircraft for them to fly – hence the mutually beneficial assignment of the 30 stored He 50 Ts to the new Estonian "air force" was arranged.

### Meanwhile, back in Estonia

In June 1943 – signifying the Luftwaffe's final take-over of all German naval air units – 16./AufklGr 127 (See) was redesignated Seeaufklärungsgruppe 127 (SAGr 127), consisting of three squadrons: 1./SAGr 127 with Ar 95 A-1s, with 2. and 3. Staffeln being established to receive the 30 Heinkel He 50 T dive-bomber trainers arriving from Pillau-Neutief. The first to arrive were four examples (Note 2) that were being used as trainers at *Erprobungsstelle (See)* ("research center, sea", the Luftwaffe's naval aviation test facility at Travemünde, Germany), which were accepted in May, followed by eight from Pillau in June, then ten in July and twelve more in August. In September the former trainers were returned to the Luftwaffe for much-needed overhauls leaving the 30 He 50 Ts available for the formation of the Estonian "night harassment" attack unit.

To train the Estonian pilots and rear gunner/observers, in September the organization's flying school was split off and moved to Liepāja-Grobiņa, Latvia, helping to form *Ergänzungs-Nachtschlachtgruppe Ostland* (Erg.NSGr or "Night Harassment Replacement Group Baltic"), commanded by German Major Walter Endres, an experienced Luftwaffe bomber pilot. After training the initial cadre of He 50 aircrews, who were largely veteran aviators but lacked combat experience, especially in ground attack operations and night flying, the school began training 26 new pilot recruits in November.

Once the training program had qualified sufficient aircrews, on 18 October 1943 SAGr 127 was redesignated NSGr 11 (*estnisch* or "Estonian" – abbreviated "est") – now commanded by German Hptm Paul Lehmann – and deployed with its two landplane squadrons (renumbered 1. and 2./NSGr 11) to Idriza (also known as [aka] Idritsa, or Pskov-West), Russia, to begin night harassment operations. The floatplane unit – retaining its 1./SAGr 127 designation – became an autonomous unit, commanded by Estonian Oberleutnant (Oblt) William Laanekõrb, and continued to fly mine surveillance and ASW patrols over the Gulf of Finland from Lake Ülemiste.

Assigned to Fliegerdivision 3 (Note 3), the Estonian unit's mission was night harassment attacks against Soviet troop positions south of Ilmen Lake, at the Lovat River, and near Leningrad. Initially NSGr 11 was equipped with 30 He 50 Ts: 13 in each squadron and four with Lehmann's group command staff flight (called a *Stabkette*). "Der erste Stuka" was a two-seat biplane powered by a 650hp Bramo 322B nine-cylinder radial engine and its relatively slow speed made it well suited for night operations. Armed with a single fixed 7.9mm MG 17 in the nose and a flexible 7.9mm MG 15 for the observer, the He 50 could carry 50kg (110lb) bombs on two racks under the fuselage between the landing gear and one under each wing, just outboard of the landing gear.

Night flying is inherently dangerous and night combat even more so, resulting in several losses during the first months of operations. On 14 November a He 50 crash-landed in heavy fog at Idriza; the pilot was badly injured. Thirteen days later another Heinkel force-landed at Idriza due to ground fog and was moderately damaged, reducing the two squadrons to 12 aircraft each.

The Heinkels were reinforced on 27 December 1943 with the formation of 3./NSGr 11 (est) at Jõhvi-Tammiku airfield, Estonia, initially established with

Arado Ar 66 C trainers rigged as light bombers. In March 1944 these were supplemented by as many as 18 of the 20 former *Hærens Flyvertropper* (HFT or Danish Army Air Corps – Note 4) Fokker C.5e biplanes confiscated by the Nazis in the previous August. By that time, the Red Army's advances had reached Narva, on the eastern frontier between the large Peipsi Lake and the Gulf of Finland, so NSGr 11 *Stab* ("staff") and its other two squadrons were withdrawn to Jõhvi, flying missions to help relieve pressure on this portion of the front for the next four months. (Note 5)

About this time, the Arado floatplane squadron (1./SAGr 127) was down to seven Ar 95 A-1s and four He 60s. (Note 6) Nevertheless, on 11 February 1944, the unit was lauded by Kapitän zur See Willibald Schmidt, commanding Kriegsmarine forces in the Eastern Baltic, for having "been in spirited action that has extended over the Gulf of Finland to the Bay of Kronstadt... [and] obtained valuable reconnaissance data for the navy before the capture of Tütarsaar (Tütar Island). As a naval reconnaissance squadron, the unit has continued its operations over the Gulf of Finland and has to date completed over 1,000 operational sorties, often in the face of enemy countermeasures. It is thanks to the untiring reconnaissance activities of this squadron that successful attacks could be carried out against enemy submarines by our naval forces."

NSGr 11 had also suffered attrition during the winter and early springtime, such that by May (and through August) 1944 the unit reported 22 He 50s on strength, with an average of 19 serviceable. According to surviving Luftwaffe records, these were gathered into 1. Staffel (with two assigned to the *Stabkette*) while 2. Staffel was reequipped with a dozen or so C.5s (one was lost in a crash during a night training flight in the summer) and 3. Staffel had about 18 Ar 66 Cs and an Hs 126. While this listing appears to be a tidy arrangement, it must be remembered that the three squadrons commonly operated a mixture of all three types, with the squadron's "assigned type" normally predominating.

Additionally, about this time Erg.NSGr.Ostland was reduced to 16 Bü 131s and 19 Ar 66s and Go 145s (three Ar 66s were modified for instrument training and three others mounted machine guns in the rear cockpit for air gunner training) but had successfully completed the flying training for the 26 student pilots and was transferred to Tartu (German name: Dorpat) in June to continue tactical training. On 11 August the unit was split between Erg.NSGr.Estland (Estonian) and Erg.NSGr.Lettland (Latvian). In any event, increasing fuel shortages resulted in the new pilots' tactical

training being suspended in September, resulting in only six former Estonian pilots completing their refresher/orientation flying courses.

Meanwhile, Red Army pressure (by the 8<sup>th</sup> Army) on the Narva Front forced NSGr 11 to withdraw to Rahkla, south of Rakvere, in northern Estonia, in June/July, but in August it was transferred south to Adavere (in Põltsamaa Parish – 1. and 2. Staffel) and Kärevere (southeast of Adavere – 3. Staffel), northwest of Tartu, to begin operations against the Soviets' 2<sup>nd</sup> Shock Army which was advancing on the Tartu Front, south of Lake Peipsi. (Note 7)

The increasingly intense and desperate operations resulted in additional losses, three aircraft (types unknown) being lost between 1 and 17 August and a total of seven airplanes were lost on the night of 29 August, in what became known as the “Kärevere pauk” (“Big Bang of Kärevere”). Due to an air traffic control error, Oblt Georg Poolma, technical officer for 3./NSGr 11, flying the squadron's only Fokker C.5 (tail number “2”), landed atop an Ar 66 that had not taxied clear of the landing path, resulting in the destruction of both aircraft. The rest of the returning aircraft were diverted to Adavere where, in the darkness on the unfamiliar airfield, one of them rammed two C.5s, resulting in the destruction of all three.

In the middle of September, the 2<sup>nd</sup> Shock Army's renewed offensive captured Tartu while the 5<sup>th</sup> Guards Tank Army broke through German lines in Latvia and drove to the Dvina River, ten miles south of Riga, isolating the Wehrmacht's *Heeresgruppe Nord* in the two Baltic states. Consequently, on 17 September, Admiral Burchardi began evacuating the III SS Panzer Corps, 11<sup>th</sup> (East Prussian) Infantry Division and 20<sup>th</sup> Estonian SS Division. Some 50,000 troops, including 13,000 wounded, and 20,000 civilians were evacuated before the Red Army recaptured to Tallinn five days later.

Having flown 7,000 sorties in the defense of their homeland, on 18 September NSGr 11 was ordered to withdraw its remaining 17 He 50s, 13 Ar 66s, and seven C.5s to Blome (German name: Smiltene, because of its proximity to Smiltene) in northern Latvia. (Note 8) The evacuation flights occurred on 22 September, but two

days later the unit was sent further south, to Liepāja-Grobiņa (Libau-Nord), on the Latvian coast, and thence to Tirkšliai (aka Mažeikiai; German name: Maschaiken), Lithuania. (Note 9)

On 1 October 1944, the evacuation from Liepāja-Grobiņa began, but two of the aircraft developed problems. (Note 10) The crews – a pilot and two mechanics with each aircraft – worked together to get the C.5e and He 50 operational, but having lost heart because of the Soviets' return to their small nation, the Estonians decided to fly to Sweden, joining three (of the eight remaining) Ar 95 A-1s from 1./SAGr 127 that had deserted one week prior. (Note 11)

Worried that these presaged wholesale desertions by the Estonian aircrews, on 7 October 1944 OKL ordered all three Estonian flying units – NSGr 11, 1./SAGr 127, and Erg.NSGr.Estland – disbanded. For NSGr 11 this order took effect at Heiligenbeil, East Prussia, five days later. The 1,200 members of NSGr 11 were absorbed into the Luftwaffe's flak corps or volunteered to join the Estonian units within the Waffen-SS. While a considerable number of Estonian veterans managed to reach the West during this chaotic time, many more ended up as Soviet prisoners of war. Working conditions in Soviet prison/labor camps was brutally harsh, resulting in many deaths, the survivors finally being released in 1955/56.

Under the oppressive Soviet rule, the small, freedom-loving nation of Estonia would have to wait 45 years – until the dissolution of the USSR – to renew its independence (on 20 August 1991; the USSR recognized the Estonia's independence on 6 September 1991) before re-establishing its military aviation service on 16 December 1991. The *Eesti Õhuvägi* (Estonian Air Force) currently has two Czech-built unarmed Aero L-39C jet trainers, four Robinson R44 four-place training/patrol helicopters, and two transports (former Soviet Antonov An-2 Colts being replaced by two US-supplied Short Brothers C-23 Sherpas).

Douglas C. Dildy (#844), USA.

## End Notes

1. Actually two Russian subs – *Shch 406* and *Shch 408* – were lost in the Gulf of Finland during this time period, four others were lost (probably to German mines) at other times during 1943.

2. Known examples are He 50 V-1 TH+HJ (W.Nr.406), He 50 V-18 TH+HK (W.Nr.2/967), He 50 G TH+HL (W.Nr.765), and He 50 GN+NK (W.Nr. unknown).

3. Fliegerdivision 3 was headquartered at Petseri, Russia, and was assigned to Luftflotte 1, supporting the



AGN's Courland Front, the northern portion of the Eastern Front. This command consisted of four NSGr (NSGr 1, 3, 11, and 12), one daytime assault group (II./SG 3) flying Ju 87s and FW 190s, and a night reconnaissance group (NAGr 5) operating FW 90s and FW 189s.

4. During 1933-35, the Danish *Hærens Flyvertropper* (Army Air Corps) acquired 24 Fokker C.5es (one purchased from Fokker, the rest license-built by the *Flyvertroppernes Værksteder* [Aviation Workshops]), equipping two reconnaissance squadrons. During the Nazi invasion of Denmark on 9 April 1940, four of these – R-22 (c/n 63), R-30 (c/n 71), R-32 (c/n 73), and R-49 (c/n 82) – were destroyed. The remaining 20, including those repaired after being damaged in the Luftwaffe's attack, were placed in storage until confiscated by the Luftwaffe after 29 August 1943. (See SAFO #117, Vol. 30/No. 1). It is known that at least one was sent to the Luftwaffe test center at Rechlin (one was probably DZ+OG). On 30 June 1944 NSGr 11 was reported to have 17 C.5es on strength, of which 15 were serviceable. Additionally, one is known to have been issued to Erg.NSGr.Ostland at Liepāja-Grobiņa (Libau-Nord), Latvia. Photographic and logbook evidence (showing the squadron "tail number") have aircraft numbered up to #18.

5. NSGr 11's squadron commanders were, respectively: Oblt Raimund Ots, Hptm Karl Roovet, and Hptm Aavo Ürgsoo.

6. During this period (Dec 43-Jun 44), two Ar 95s were always in overhaul, providing the unit with five operational Arados. According to Luftwaffe records, two additional Ar 95s were received in July and two more in August, bringing the unit's strength to eleven (including two in overhaul) at the beginning of September. The last He 60s were withdrawn from use in June.

7. Luftwaffe strength report for 1 August 1944 shows NSGr 11 (est) with 22 He 50s (two in Stab), 11 Fokker C.5s, 17 Ar 66 Cs and one Hs 126. In September, "at Põltsamaa" (meaning Adavere and Kärevere), the unit reported having 17 He 50s, seven C.5s, and 13 Ar 66s on strength.

8. Upon receiving the word to evacuate, on 18 or 19 September, Hauptleute (Captains) Roovet and Ürgsoo (COs of 2. and 3./NSGr 11) flew C.5e 3W+OS to Tallinn-Ülemiste to arrange the evacuation of the families of NSGr 11 members. When trying to start the Fokker for the return/evacuation flight on 22 September, the aircraft developed a malfunction and had to be abandoned, and was subsequently one of four NSGr 11 C.5s captured by the arriving Soviets.

9. Also on 22 September 1944 the remaining five serviceable Ar 95 A-1s were evacuated from Tallinn to Pillau, thus returning the Arado floatplanes to whence they had come. From Luftwaffe records it appears that, in addition to the defections, three Ar 95s were destroyed/abandoned at Ülemiste prior to the withdrawal.

10. The C.5e was 3W+OL (c/n 75, former HFT R-42) and He 50 T was 3W+NO (W.Nr. 1260), landing at Hemse on the Swedish island of Gotland. Both these were eventually scrapped in Sweden. These were followed 12 days later by C.5e 3W+OD (c/n 64), which landed at Upplanda, near Vetlanda, carrying three new pilots and a mechanic. This aircraft, or parts of it, was returned to Denmark in 1947. An attempted flight by a third C.5e ended when the aircraft rammed an Ar 66 while taxiing out for takeoff – the pilot had never before flown a C.5.

11. These were Ar 95 A-1s 6R+LL (W.Nr.2346), 6R+BL (W.Nr.2350), and 6R+UL (W.Nr.2351). They alighted at three different locations near Stockholm carrying seven Estonian airmen, one woman and a baby. The aircraft were purchased by Sweden and were registered SE-ANT, SE-AOD, and SE-AOE, respectively.

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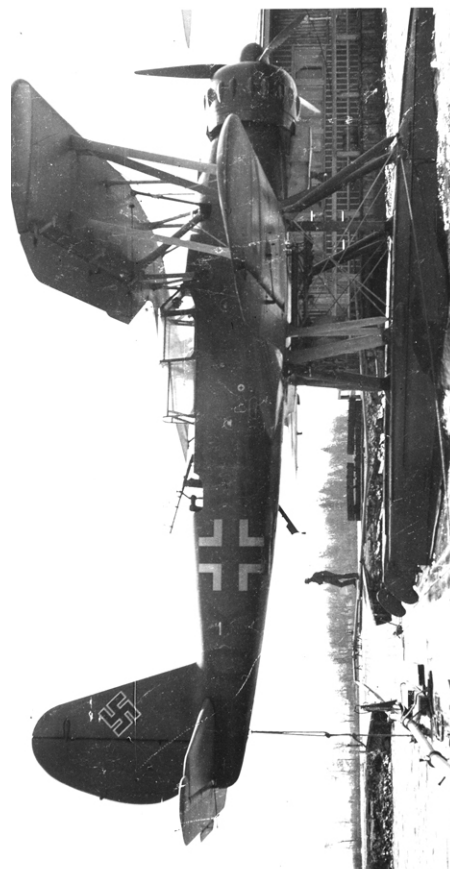
Douglas C. Dildy, Albuquerque, NM, USA

## Known Markings of Estonian WWII Aircraft

<u>Type Aircraft</u>	<u>Known Markings</u>	<u>Other Notes/Remarks</u>
Arado Ar 95 A-1	DK+VD	Unit <i>Stammkennzeichen</i> "side code" markings were changed from "DK+xx" to "6R+xx" in late March, 1944. W.Nr. 2350
	DK+UU	
	6R+BL	
	6R+LL	
	6R+UL	
Fokker C.5e	3W+OB	Original Codes: DZ+OB ("DZ" prefix indicated non-operational aircraft) DZ+OD/tail no. "8" – c/n 64, former HFT "R-23" DZ+OF DZ+OG – Probably at Luftwaffe's Rechlin test center DZ+OI DZ+OJ DZ+OL/tail no. "18" – c/n 75, former HFT "R-42" DZ+OM DZ+ON – c/n 77, former HFT "R-44" DZ+OO DZ+OR DZ+OS/tail no. "17" – abandoned at Ülemiste and captured by Red Army DZ+OT
	3W+OD	
	3W+OF	
	3W+OG	
	3W+OI	
	3W+OJ	
	3W+OL	
	3W+OM	
	3W+ON	
	3W+OO	
	3W+OR	
	3W+OS	
	3W+OT	
Heinkel He 50 T	3W+BA	W.Nr. 1260 W.Nr. unkn – tail no. "1" W.Nr. unkn – tail no. "20"
	3W+NM	
	3W+NO	
	3W+NP	
	3W+NR	
	3W+NZ	
	3W+ZH	
	CC+AN	
	CN+HM	
	GN+NH	
Henschel Hs 126	6R+xx	Later 6X+AA Later 6X+AB Later 6X+AC Later 6X+AD Formerly AW+12
Ar 66 and Go 145	6X+xx	
PTO-4	SB+AA	
	SB+AB	
	SB+AC	
	SB+AD	
Miles Magister	SB+AF	Formerly ES-RWD Later 6X+BP
De Havilland DH.89	SB+AH	
RWD-8	SB+AJ	
Bü 131	SB+BP	
Klemm 35	VB+QW	
	SB+FB	



The Estonian "air force" in WW2 began with five former aero club aircraft operating as "Sonderstaffel Buschmann". Four of these were locally designed PTO-4 light sports monoplanes, coded SB+AA through SB+AD. Patterned after the Miles M.17 Magister and Klemm Kl.35 and powered by a 120 hp deHavilland Gypsy engine, these light two-seaters were used for coastal patrols along Estonia's Gulf of Finland shoreline. (Frits Gerdessen Collection)



The first combat-worthy aircraft assigned to "Sonderstaffel Buschmann" were ten obsolete Arado Ar 95 A-1s (originally built for Turkey) floatplanes acquired from the Luftwaffe's storage facility at Pillau-Neutief near Königsberg, East Prussia. These were used to fly anti-submarine and mine-surveillance patrols along Estonia's coastline. (Frits Gerdessen Collection)



The rather primitive aerodrome and maintenance facilities at Ülemiste airfield resulted in two of the old Ar 95s undergoing overhaul and other maintenance at all times during December 1943 to June 1944. Eight examples remained on strength when the Estonians were finally forced to evacuate their home country in the face of the Red Army's relentless advance. (Frits Gerdessen Collection)

# The Fiat C.R.20 in Service

## Part 1: Italy

Rudolf Hoefling

[The following article is a translation of part of an article that first appeared in *Flieger Revu X*. The original article started with the development of the Fiat C.R.20. This translation skips that part and goes straight to the operational service of the Fiat fighter. This first part of the translation covers the C.R.20 in service with the Regia Aeronautica. The second part will cover service with the air forces of seven other countries. The translation is by Goggle with assistance from Jim Sanders and clarifications by the author, Rudy Hoefling.]

Although the Fiat C.R.20 participated in the Zurich International Aviation competition in August 1927, they did not win any awards in the speed or aerobatic competitions. However, in mid July 1927 shortly before these disappointing results, Capt. Gelmetti flew a C.R.20 on a 13 hour flight around southern Italy, increasing the country's appreciation of this new Fiat fighter.

In the same year, the C.R.20 entered service with the Regia Aeronautica's 1° Stormo Aeroplani da Caccia at Campoformido and 2° Stormo Aeroplani da Caccia. It replaced the obsolete Nieuport-Delage Ni.D.29, the Ansaldo AC.2 (Italian version of the French-license Dewoitine D.1ter), and the Fiat CR.1.

By 1930, the Fiat C.R.20 was in service with 26 squadrons:

- 1° Stormo Aeroplani da Caccia
  - 6° Gruppo stationed at Campoformido (79<sup>a</sup>, 81<sup>a</sup>, and 88<sup>a</sup> Squadriglia).
  - 9° Gruppo stationed at Aviano (73<sup>a</sup>, 96<sup>a</sup>, and 97<sup>a</sup> Squadriglia).
  - 17° Gruppo, also stationed at Campoformido (71<sup>a</sup>, 72<sup>a</sup>, 80<sup>a</sup>, and 90<sup>a</sup> Squadriglia).
- 2° Stormo Aeroplani da Caccia
  - 8° Gruppo stationed at Mirafiori (92<sup>a</sup>, 93<sup>a</sup>, 94<sup>a</sup>, and 95<sup>a</sup> Squadriglia).
  - 13° Gruppo also stationed at Mirafiori (77<sup>a</sup>, 78<sup>a</sup>, 82<sup>a</sup>, and 85<sup>a</sup> Squadriglia)
  - 23° Gruppo stationed at Cinisello (70<sup>a</sup>, 74<sup>a</sup>, 75<sup>a</sup>, and 83<sup>a</sup> Squadriglia). This Gruppo also used the older Ansaldo AC3)

In addition, Fiat C.R.20 were in the inventory of the 7° Gruppo Autonomo stationed at Ciampino Sud (84<sup>a</sup> and 91<sup>a</sup> Squadriglia). A float version, the Fiat C.R.20 Idro served with 80° Gruppo Autonomo Caccia Marittimo stationed at Orbetello (161<sup>a</sup> and 162<sup>a</sup> Squadriglia).

By 1931, most of these Squadriglias had their C.R.20 replaced or supplemented by the newer Fiat C.R.20bis. In the next two years, the 6° and 17° Gruppo were assigned the C.R.20 Asso version.

In the following years, all land and sea versions of the C.R.20 in these operational squadrons were slowly being replaced by more modern types such as the Breda Ba.65, Caproni-Bergamaschi AP1, Fiat C.R.30 and C.R.32, and by Macchi M-41 flying boats. In 1937, the 162<sup>a</sup> Squadriglia of 88° Gruppo Autonomo Caccia Marittimo at Vigna di Valle was equipped about half with the last Fiat C.R.20 Idro. The other half of the Squadriglia consisted of Cant 25 flying boats.

As trainers, the C.R.20 remained in service with the Regia Aeronautica until the start of World War II.

### C.R.20 Aerobatic Teams

In 1929, senior officers of the Regia Aeronautica visited the Royal Air Force in England. At Hendon, they were treated to an exhibit of formation aerobatics by a British fighter squadron. (Note 1) The interest and enthusiasm of the Italian delegation was so great that, after returning to Campoformido, near Udine, the Scuola di Campoformido - a school for formation aerobatics - was established under the command of Col. Rino Corso Fougier. The Regia Aeronautica leadership decided that every Italian fighter pilot had to be able to maneuver his aircraft, even under war conditions, with the greatest possible precision. This included not only formation flying and aerial combat, but also flying in formation while attacking ground targets.

That same year, the first unofficial aerobatic demonstrations at the school was held with Fiat C.R.20bis under the leadership of Serg. Magg. Erardo Fruet at Campoformido and Udine. In 1930, the first



official aerobatic teams of the Regia Aeronautica were established. It was initially equipped with Fiat C.R.20bis and from the following year with C.R.20 Asso.

On 8 June 1930, the 1<sup>a</sup> Giornata dell 'Aria (1st Aviation Day) was held in Rome. It featured the first public appearance of an official Italian Aerobatic Team. Five Fiat C.R.20bis of 71<sup>a</sup> Squadriglia Caccia, under the leadership of Ten. Ariosto Neri, showed their skills to an enthusiastic audience. (Note 2) The highlight of their program featured the five fighters, in wedge formation, flying only a few meters off the ground when the formation leader zoomed his plane into the air and then made a loop while his wingmen followed in a similar maneuver. This spectacular maneuver was repeated three times to an enthusiastic audience. This aerobatic maneuver was named "La Bomba". (Note 3)

On 5 September 1930, 74<sup>a</sup> Squadriglia began an aerobatic tour that began in Budapest and ended in Tirana via Belgrade, Sofia, Bucharest, Istanbul, and Athens. In an aerobatic demonstration on 23 September at Istanbul, two C.R.20s collided in air; Serg. Brizzolari was killed. On the 27th of the month, 74<sup>a</sup> Squadriglia Caccia held their aerobatic performance in Tirana. On 1 October 1930, 74<sup>a</sup> Squadriglia was back in Italy.

A week later, on 8 October, the Regia Aeronautica helped celebrate the birthday of the King of Albania, Ahmed Zog I., with a large flying parade at Tirana with at least 80 aircraft. In addition to the Fiat C.R.20, there were Meridionali Ro.1 (licensed version of the Dutch Fokker C.V), Caproni Ca.74, and Ca.101 (Note 4)

During the 2<sup>a</sup> Giornata dell 'Aria, which was held at Rome Littorio in 1932, the Scuola di Campoformido presented a new peak in formation aerobatics. A total of 27 Fiat C.R.20 Asso of 1<sup>o</sup> Stormo Aeroplani da Caccia, divided into three closely flying Squadriglias, showed formations looping which culminated in the La Bomba.

On 10 May 1934, 4<sup>o</sup> Stormo Aeroplani Caccia replaced 1<sup>o</sup> Stormo as aerobatic team. This year the teams flew seven Breda Ba.19, an aerobatic biplane trainer, but the following year they graduated to the Fiat C.R.20 Asso. In 1936, the 73<sup>a</sup> Squadriglia Caccia of the 4<sup>o</sup> Stormo flew the new, more powerful Fiat C.R.32 as the acrobatic team of the Regia Aeronautica. The 1936 marked the end of Fiat C.R.20

as an aerobatic aircraft and the C.R.32 was used in this role until the beginning of World War II. (Note 5)

### **Apennines Maneuvers**

At the end August 1931, the Regia Aeronautica held major maneuvers over the Apennines. These maneuvers were designed to show the world the power of the Italy's air force. They were attended by a total of 894 aircraft, divided into 12 Stormos with 28 Gruppos, and 70 Squadriglias. These hitherto largest air force maneuvers in Italy failed to make an impression either on the local population nor on the domestic and foreign press.

For these maneuvers, the Fiat C.R.20 Asso of 1<sup>o</sup> Stormo Aeroplani da Caccia carried markings consisting of five-pointed stars, possibly light blue, on the fuselage and on the wings.

The end of these maneuvers on 3 September 1939 featured a parade in Ferrara attended by Italian King Victor Emmanuel III. The mass departure of aircraft leaving for their home airfields, created such turmoil that Serg. Allavena crashed his C.R.20 into the audience with, according to different sources, between three and nine people were killed.

### **The Fiat C.R.20 in Action**

The only combat use of the Regia Aeronautica's Fiat C.R.20 occurred in the mid-1930s when in October 1935, Italian troops began the occupation of Abyssinia (Ethiopia). Flying from Asmara in Italian Eritrea were eight Fiat C.R.20bis of 106<sup>a</sup> Squadriglia supplemented by Meridionali Ro.1 reconnaissance aircraft. Since there was no opposition in the air, the C.R.20bis were mainly used for reconnaissance and ground attack missions.

Another mixed unit was 108<sup>a</sup> Squadriglia, which had Meridionali Ro.37 in addition to their C.R.20. The 111<sup>a</sup> Squadriglia in Otumlo had twelve Fiat C.R.20, and in Italian Somaliland nine C.R.20s were alternately stationed at Mogadishu, Gorraheh, and Lugh Ferrandi. Overall in this conflict, 41 Fiat C.R.20 were used. They were the only fighters used by the Regia Aeronautica in this theater of war.

At the beginning of the war, the Ethiopian air force included a total of 15 machines, of which only nine were operational, and these exclusively used for communication and transport flights. Thus, no dogfights occurred between Italian and Ethiopian aircraft. It was the bomber and reconnaissance aircraft

of the Regia Aeronautica (especially Caproni Ca.101, Ca.111, Ca.133, and Meridionali Ro.1) that had the lion share of the air war against the troops of the Negus Haile Selassie I.. The Fiat C.R.20s in Ethiopia together with the Meridionali Ro.37 of 103<sup>a</sup>, 105<sup>a</sup>, 109<sup>a</sup>, 110<sup>a</sup>, and 118<sup>a</sup> Squadriglias of CT (Caccia Terrestre) were used for ground attacks. The Italians did not hesitate to be the first country to use poison gas against the enemy.

In this war, which ended on 5 May 1936, the Regia Aeronautica lost 72 aircraft to ground fire and accidents. During the next 13 months, the aircraft of the Regia Aeronautica were repeatedly used to fight Ethiopian guerrillas.

### **A Christmas Eve Tragedy**

On 24 December 1935, at 1500 hours, 14<sup>a</sup> Squadriglia B.N. A.O.I, (Note 6), equipped with Caproni Ca.101, received orders to support Italian ground forces, at Ad Gaga, near Selaclacà.. The three-engine Caproni Ca.101 took off from their airfield at Asmara and headed for Selaclacà. The escort for the bombers was provided by 106<sup>a</sup> Squadriglia Caccia with their Fiat C.R.20bis under the command of Capt. Colacicchi. (Note 7).

When the Italian aircraft arrived over Selaclacà, the hostilities on the ground could not be seen. Therefore, the Capronis left their normal flight altitude and proceeded to search at low-level. Soon after, the Italian airmen discovered the vanguard of their own infantry as well as small groups of Abyssinian horsemen and foot soldiers. The Italian aviators searched the horizon for rewarding targets to attack. As they could not find any major troop concentrations, the Capronis dropped their bombs on any recognizable target. Meanwhile the Fiat C.R.20bis of 106<sup>a</sup> Squadriglia attacked enemy infantry and cavalry with their machineguns.

After dropping their bombs, the Capronis used their machineguns to attack scattered groups of Abyssinian troops. The pilot of one of these bombers was Vittorio Mussolini, son of the Italian El Duce, Benito Mussolini. (Note 7) After all the bombs were dropped, the young Mussolini manned one of the machineguns of his Caproni. He later reported: "I still remember two little scenes from that wild day. I had been shooting at a Tucul (nomad tent) when a big, shaggy dog came out and barked at us. I think a child came out, but not an adult. I was glad to have not taken more shots. A moment later, I spotted an

Abyssinian with a gun. In my fire, he fell to the ground."

During these low-level attacks, the Fiat C.R.20bis of Corporal Lavena was hit in the oil tank by gunfire from the ground and he was forced to make an emergency landing in enemy territory. A squadron mate, Corp. Baschi, who was following the action, landed his C.R.20bis near Lavena in the hope of taking him on board his single-seat aircraft. Baschi seemed to succeed until he suddenly ran into an unseen small ditch and his Fiat turned turtle. These events were observed by a third Fiat pilot and the crew of a Caproni. Both machines were circling over the two downed pilots who, unhurt, had climbed from their Fiats and were now waving white cloths. The circling aircraft strafed the Abyssinian infantry that repeatedly tried to approach the two fighter pilots.

While the attacks on the scattered Abyssinian ground troops went on, it quickly became dark. The airborne Italian aviator saw smoke rising from the ground; the dry grass directly below them had caught fire. The other Capronis were headed for their home airfield at Asmara when, shortly after passing the village of Adi Quala, they received a radio message informing them that two Fiats had made an emergency landing behind enemy lines and that the remaining fighters would stay as long as their fuel supply allowed, circling over their downed comrades to give their own infantry the opportunity to rescue the two apparently uninjured pilots. The Capronis arrived at Asmara, just as the sun was going down. The airfield commander ordered, large, transportable searchlights ready to assist the Fiats in landing in the dark. Soon afterwards, the first fighters appeared and landed with their last drop of fuel. This was the first night landing carried out by fighters in East Africa.

Since they had to leave two comrades in enemy territory, the mood among the aircrew was very depressing on this Christmas Eve,. That same night, rumor made the rounds that the two downed fighter pilots had safely reached their own lines. However, the following morning it was officially announced that both flyers were still listed as missing. At sunrise on Christmas day, search aircraft from Asmara went to the crash site. There, they found only the two wrecked planes, which had now caught fire and along with the surrounding brush. A search of a wider area found no trace of the two Italian pilots. On 26 December, the air strikes were continued on enemy ground targets.

## Notes

1 The United Kingdom is regarded as the birthplace of formation aerobatics. In 1921, the first aerobatic teams, equipped with Sopwith Snipes, Royal Aircraft Factory S.E.5as, and Avro 504Ns emerged. When the Italian Delegation visited the airfield of Hendon in 1929, the contemporary English aerobatic teams were mostly equipped with the Gloster Grebe II. The following year, the Armstrong Whitworth Siskin IIIA was allocated. In 1929, the first smoke devices were attached to British aerobatic planes to allow the audience to more clearly follow the maneuvers. The following year, the first formation aerobatic flights were made with the wing tips of the participating planes connected by rubber bands.

2 According to some Italian sources, these were to Fiat C.R.20 Asso.

3 La Bomba, or as it is known nowadays as the Bomb Burst, has become the standard of international, military formation aerobatics. Since then it has always been the final highlight of each program of today's Italian Freccie Tricolori.

4 In 1931, the Regia Aeronautica had the three aerobatic teams:: (1) Five Fiat C.R.20 Asso of 71<sup>a</sup> Squadriglia with

squadron leader Ten. Ariosto Neri and the other pilots Melandri, Scarpini, Diamare, and De Giorgi. (2) Seven Fiat C.R.20 Asso of 79<sup>a</sup> Squadriglia with squadron leader Reglieri and the other pilots Moscatelli, Cianfarani, Serg.Magg. Erardo Fruet, Milone, and Brizzolati Sansone. (3) Three Fiat C.R.20 Asso of 80<sup>a</sup> Squadriglia with squadron leader Lucchini and the other pilots Bertoli and Cancellier.

Because of the rapidly growing popularity of these units with the audience, in 1932 the inventory of these three units was increased. (1) Nine Fiat CR20 Asso of 72<sup>a</sup> Squadriglia with squadron leader Fougier and the other pilots Moscatelli, Parini, Leotta, Fabbri, Porta, Miazzo, Mascellani and Sbardella,. (2) Nine Fiat CR20 Asso of 79<sup>a</sup> Squadriglia with squadron leader De Giorgi and the other pilots Cianfarani, Ciocchino, Bertoli, Ganda, Zorn, Capelli, Lapania, and Zanandrea. (3) Eight Fiat CR20 Asso of 84<sup>a</sup> Squadriglia with squadron leader François and the other pilots Lucchini, Bariani, Anticoli, Sbrighi, Melani, Zaldini, and Peselli.

In the following years, the aerobatic teams of the Regia Aeronautica celebrated great successes, such as the

88° Gruppo of 1° Stormo, which also visited South America with their Fiat C.R.20 Asso.

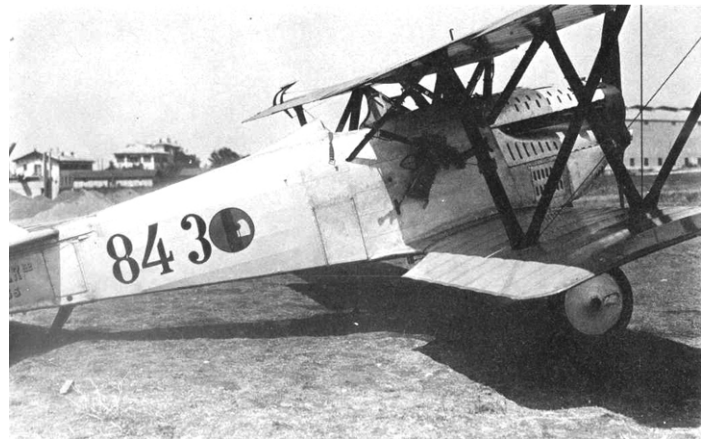
5 At the beginning of World War II, all aerobatic teams in Italy were dissolved and it was only in 1950 that a Italian military aerobatic team was formed - this time equipped with De Havilland Vampire. This was the team Cavallino Rampante. This symbol was the personal marking of the Italian fighter pilot ace of World War I, Maggiore. Francesco Baracca. It is also the company logo of Ferrari.

6 The 14<sup>a</sup> Squadriglia B.N. - A.O.I. (Squadriglia Bombardamento Notturmo - Africa Orientale Italiana) was a night bomber squadron. No night operations were carried out by this unit during the campaign.

7 The squadron commander of 106<sup>a</sup> Squadriglia da Caccia, Capitano Colacicchi, reported that Vittorio Mussolini, a fighter pilot, would often stowaway in a Caproni Ca.101 to fly missions with them.. Only after the mission started and it was too late to turn back did Vittorio come out of his hiding place.



Members of 3 Stormo proudly posing with their new Fiat CR.20.

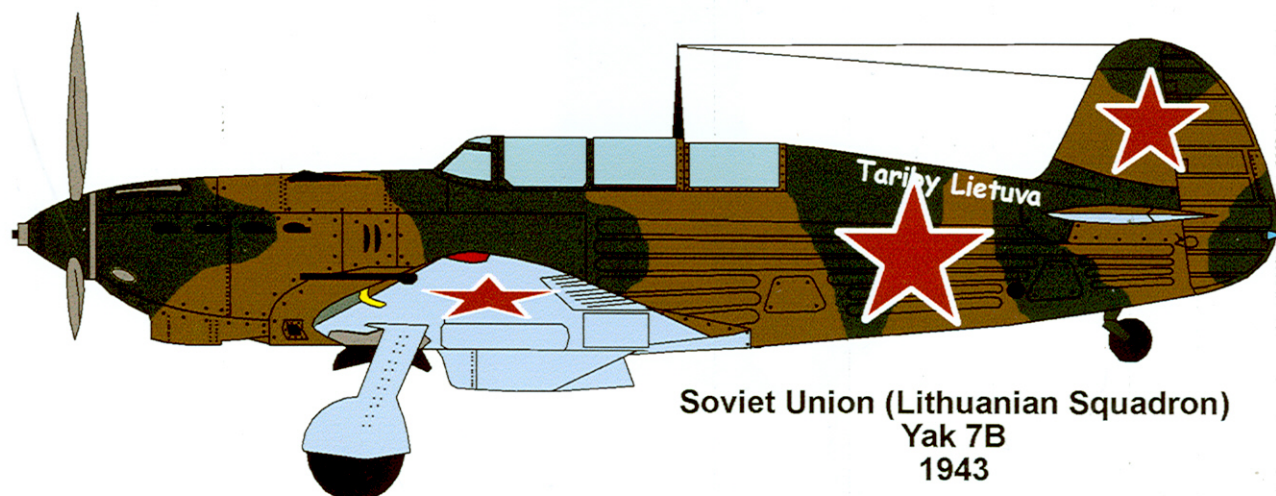
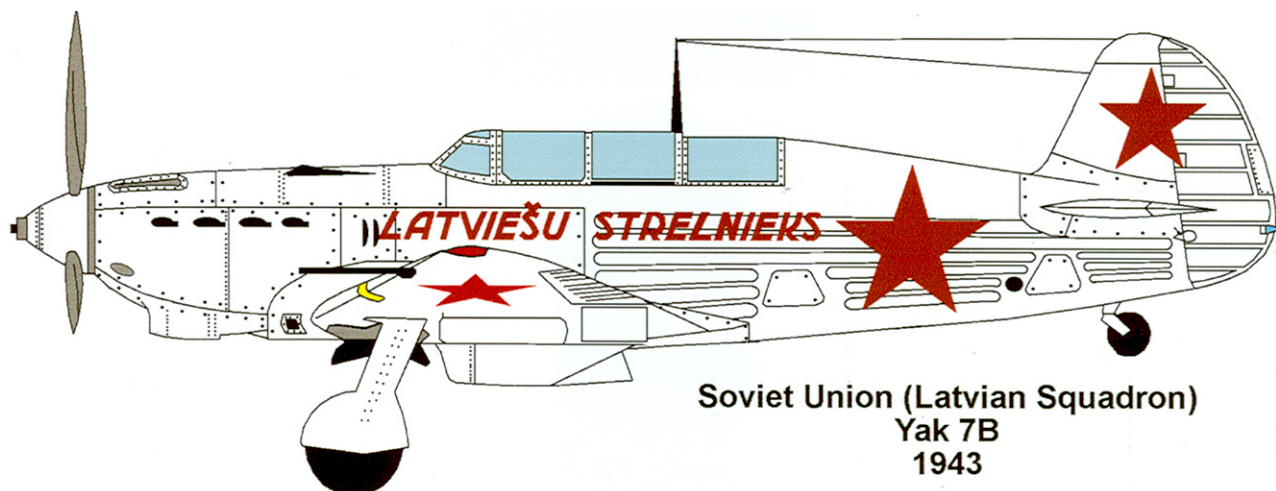


Fiat C.R.20 of 84<sup>a</sup> Squadriglia. Note the rear-firing Lewis gun, one of the many experimenta of the inventive VII Gruppo. (via Roberto Gentilli)

More photos are found on page 71.  
All photo via the author unless otherwise noted.  
Captions vetted by Roberto Gentilli.

## Military Aircraft of the Baltic Republics (Latvian, Lithuanian, and Estonia) before and during WW2

[Editor's notes: Many years ago, I received the the following color profiles. At the time, I had no way of including color in SAFO, so I filed them away for future use. Now, since the Cyber edition of SAFO is in color, I decided to use them. Unfortunately, the name of the artist was lost in the computer crash of 2015. However, the drawings are copyrighted "A.L.V. 17.IX.1998". If you know A.L.V., contact the editorial office. If you don't receive the Cyber edition, but wish to receive these color profiles, you can order the Cyber edition of this issue for \$3.00.]

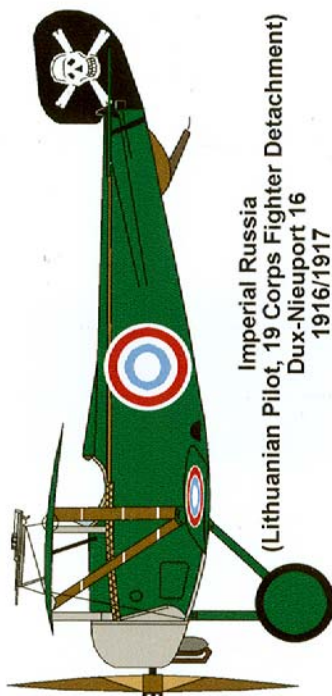


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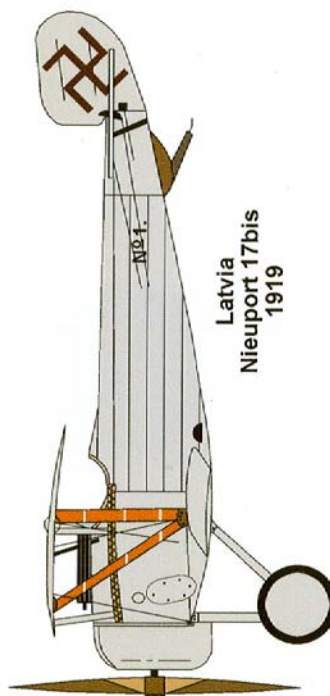




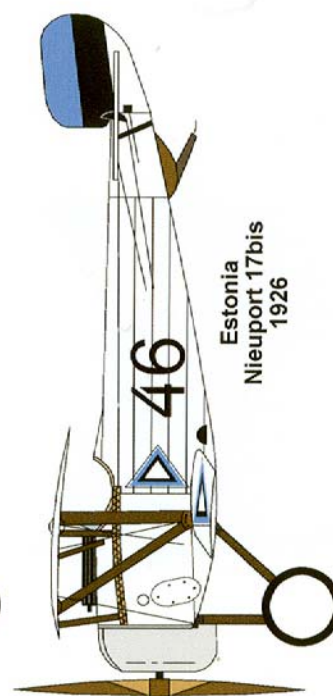
Imperial Russia  
(Estonian Pilot, 12th Fighter Detachment)  
Nieuport 21  
1917/1918



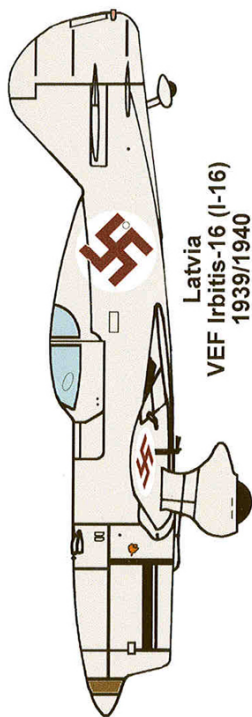
Imperial Russia  
(Lithuanian Pilot, 19 Corps Fighter Detachment)  
Dux-Nieuport 16  
1916/1917



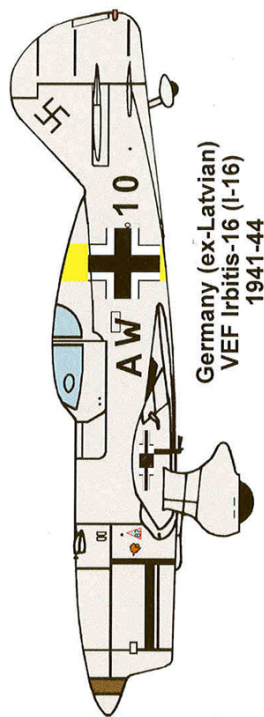
Latvia  
Nieuport 17bis  
1919



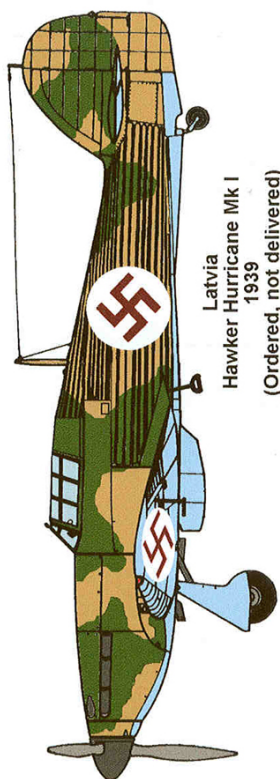
Estonia  
Nieuport 17bis  
1926



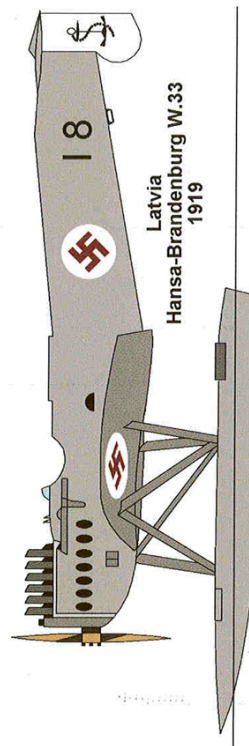
Latvia  
VEF Irbitis-16 (I-16)  
1939/1940



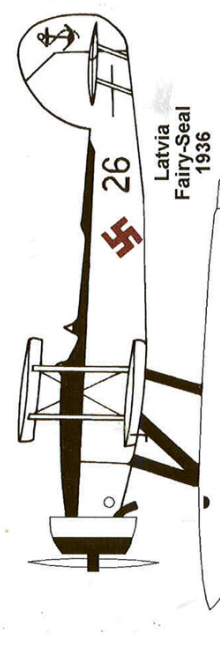
Germany (ex-Latvian)  
VEF Irbitis-16 (I-16)  
1941-44



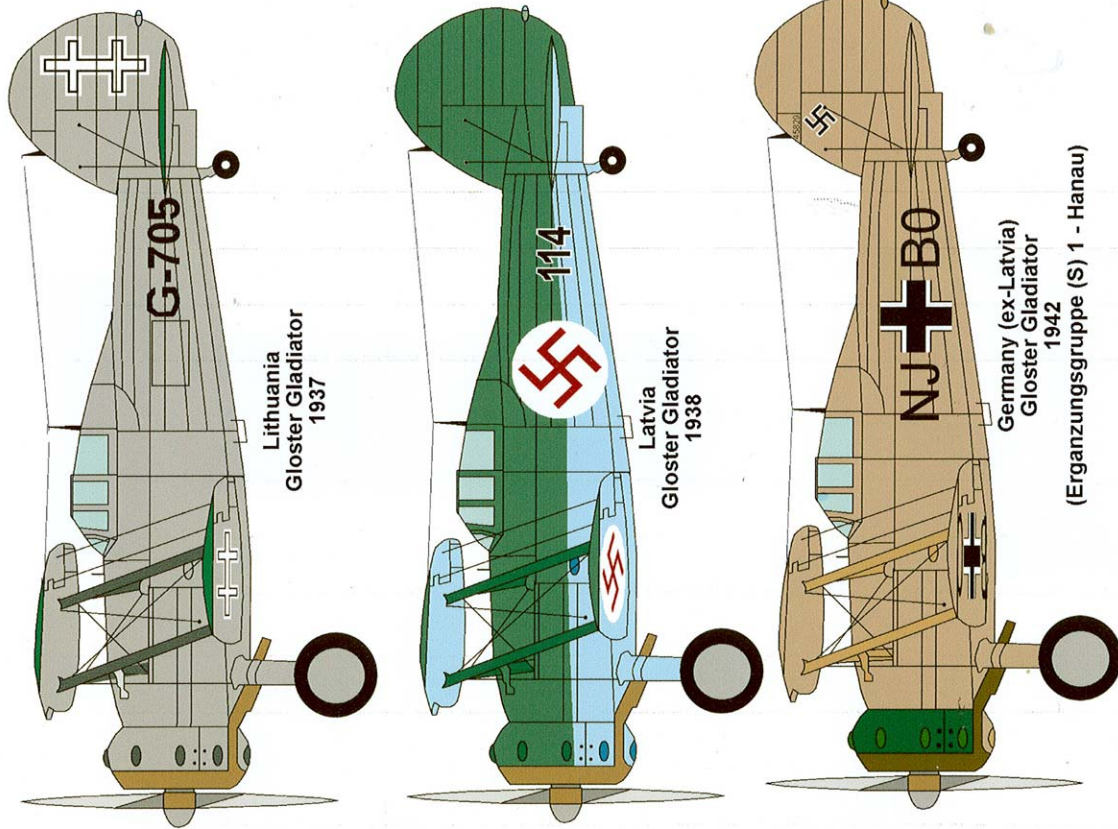
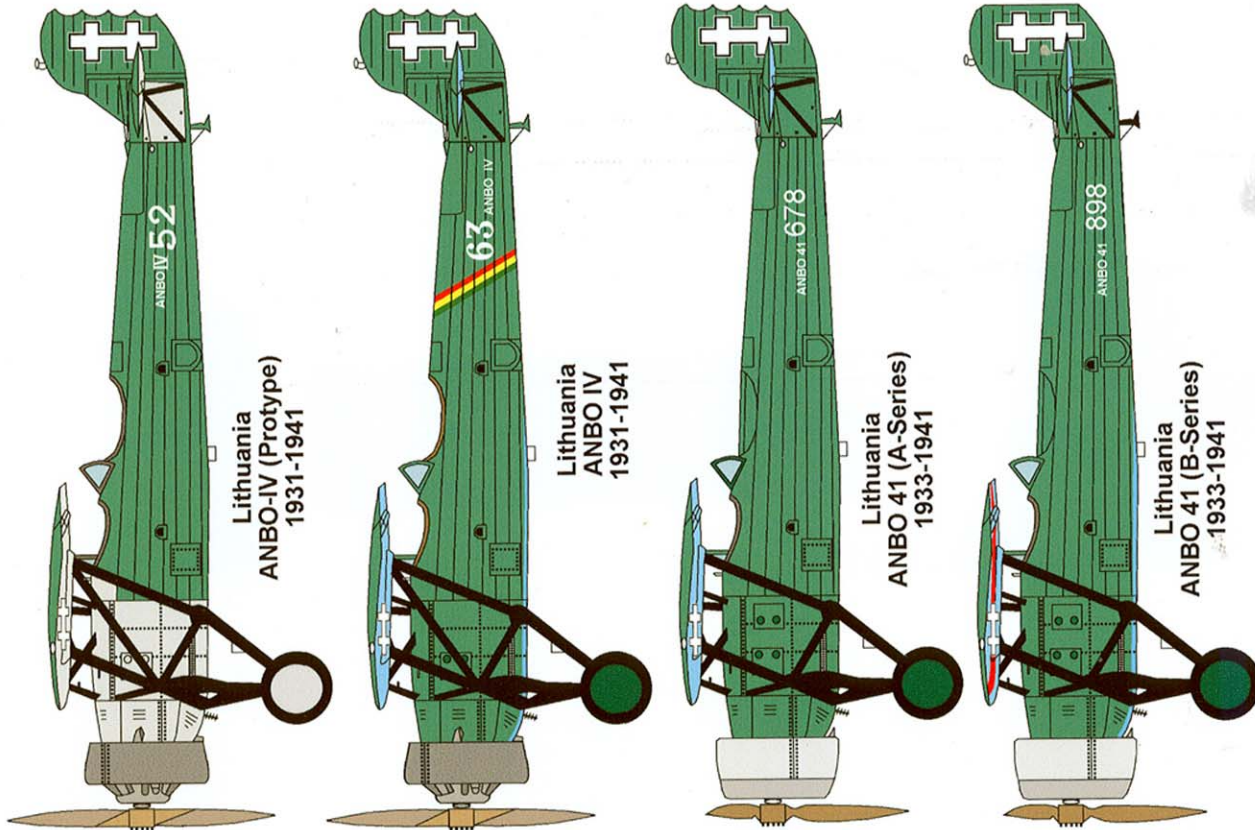
Latvia  
Hawker Hurricane Mk I  
1939  
(Ordered, not delivered)



Latvia  
Hansa-Brandenburg W.33  
1919



Latvia  
Fairy-Seal  
1936





# International Security Assistance Force Aviation

## Part 1

### Multinational Mission in Afghanistan (2001-2014)

Ted Koppel

This is a provisional survey of the non-U.S. air assets of the European/NATO-led **International Security Assistance Force (ISAF)** of over a decade of deployments in and around Afghanistan. In December 2001, the United Nations Security Council (UNSC) Resolution 1386 authorized this non-UNO mission to safeguard the interim post-Taliban government in Kabul and its immediate area. Subsequent resolutions expanded the area to include the rest of the country, authorizing greater combat engagements.

Overlapping ISAF was the US-led, non-UNSC-mandated **Operation Enduring Freedom (OEF)**, launched in immediate retaliation against al-Qaeda and its Taliban hosts in response to the terrorist attacks of September 11, 2001, in the US. Although focused on Afghanistan, OEF covered a greater area, from the Horn of Africa to India [the Andaman Sea]. Over 30 nations joined this mission (the "War on Terror" or "Global War on Terrorism") with ground forces, naval assets (some with air elements, not specifically covered herein), maritime patrol aircraft, jet fighters, helicopters, etc. The overlap occurred when some countries supported both OEF and ISAF, especially as the Afghan campaign progressed and expanded.

Eventually, at least 50 nations participated in ISAF, with even the smallest countries, ranging worldwide from Iceland to Tonga, contributing. Part of these contributions, of course, also involved aircraft.

#### AFGHANISTAN

By June 2008, the reconstituted Afghan Air Force (then still known as ANAAC, Afghan National Army Air Corps) was built up sufficiently to allot its seven [or at least some] Antonov An-32B Clines to direct ISAF support operations through the latter's Intra-Theater Air Support System (ITAS) of transport aircraft.

#### AUSTRALIA

Operation "SLIPPER" (OEF and ISAF)

AIR COMPONENT, JOINT TASK FORCE 633, MEAO (Middle East Area of Operations, which included Iraq, Afghanistan, Indian Ocean anti-piracy patrols, etc.):

- McDonnell-Douglas F/A-18 Hornet detachment, 4

RAAF aircraft, Diego Garcia Island (from 77 Sqdn, Nov. 2001-Feb. 2002, and from 3 Sqdn, Feb.-May 2002).

- Boeing B-707 refueling detachment, RAAF (one aircraft?), Manas, Kyrgyzstan (Mar. 2002-?).

- Lockheed AP-3C Orion detachment, 2 RAAF aircraft, Dubai, United Arab Emirates (Jan. 2003-?).

- Lockheed C-130 Hercules detachment, 3 (or 2) RAAF aircraft (from 37 Sqdn) Al-Udeid AB, Qatar (2003-Oct. 2009), Al Minhad AB, Dubai, UAE (Nov. 2009-?). The C-130Hs were replaced by C-130J-30s in June 2008 for Afghanistan duties.

- Boeing C-17A Globemaster III, RAAF (from 36 Sqdn), used also as shuttle to Afghanistan (2910?).

AC/TF633 units based in Afghanistan included:

Aviation Support Element; 2 Army Boeing CH-47D Chinooks (from RAAA 5th Avn. Rgt.), Kandahar AB/Airfield (KAF), Regional Command -South, under US Task Force "Wings," 25th Combat Aviation Brigade (Mar. 2006 -? 2008, or Sep. 2007?)

- Rotary Wing Group (RWG1 through 8), the above contingent renamed, part of Regional Command South Aviation Task Force (Mar. 2008-Nov 2011, and 2012-Sep. 2013). One CH-47 was lost in May 2011.

- (UAV detachment), Army Insitu/Boeing ScanEagle unmanned aerial vehicles (from 20th Surveillance and Target Acquisition Rgt, RA Artillery, including elements from 16th Air Def. Rgt. and 16th Avn. Bd.). To support five different Australian ground units, 6,200 missions (totaling 32,000 hours) were flown in Uruzgan Province from mid-2007 to Apr. 2012. The ScanEagles were replaced by the AAI Textron Systems RQ-7B Shadow 200 Tactical Unmanned Aerial System (TUAS), flying out of Multi National Base Tarin Kowt, Uruzgan.

- Heron RPA Detachment, 3 or 4 RAAF Israeli Aerospace Industries (IAI) Heron I Remotely Piloted Aircraft (RPA) [nicknamed "Blueys"],. Camp Baker, Kandahar AB. The ADF-led unit, the Tri-Service Detachment, included some NZDF personnel. Active since January 2010, by the end of 2013 the RPA unit had flown over 20,000 operational hours, before the Australian-only support mission was expanded to include other ISAF units, finally withdrawing in 2014.

## BELGIUM

The Belgian Air Component's initial contribution to ISAF was as part of UK's Operation "FINGAL" in early(?) 2002. A C-130 Hercules from 15 Wing was based in Karachi, Pakistan, due to unfavorable conditions existing in Kabul, Afghanistan, at that time. It was withdrawn in August 2002.

In August 2004, a Belgian C-130H joined the ISAF Air Task Force based at Kabul International Airport (KAIA Air Base) as ISAF VIII Det C130. In July 2005, four Belgian Lockheed F-16AM Fighting Falcons joined four Netherlands Falcons to form 1 Nld/Bel EEW F-16 Det (IS4F) in Operation "EASTERN EAGLE." (EEAW = EAPAF Expeditionary Air Wing, with EAPAF = European Participating Air Forces joint Falcon purchasing program.) It was proposed to later move the unit to Bagram Airfield as part of the Deployable Air Task Force (DATF). "EASTERN EAGLE" concluded in January 2006.

Belgian Falcons resumed their participation in ISAF as Operation "GUARDIAN FALCON" (OGF) at Kandahar Air Field/Base in September 2008. The number was increased from four to six in 2009. They also flew from Mazar-e Sharif, totaling 2,840 missions overall with 19 personnel rotations for the Falcon detachments before being withdrawn in October of 2014.

## CANADA

Operation "APOLLO" (OEF, 2001 - 2003)

Operation "ATHENA" (ISAF, 2003-'05, 2006 - '11)

Canada's OEF contribution (Operations "APOLLO," plus interim "ARGUS" and "ARCHER"), starting in late 2001, consisted of the Strategic Airlift Detachment, Long-Range Patrol Detachment, and Tactical Airlift Detachment with CC-150 Polaris, CP-104 Aurora, and CC-130 Hercules aircraft operating out of Camp Mirage, Dubai, United Arab Emirates. The base reportedly on occasion also hosted the CC-177 Globemaster III.

With the switch-over to ISAF (Operation "ATHENA") in 2003, the Tactical Airlift Detachment (TAD) remained at Camp Mirage with the Hercules as part of the Canadian-Netherlands Combined Air Bridge, with regular flights into Afghanistan, until the closing of Camp Mirage in 2010.

Based in Afghanistan (2003-2004) with Canadian Forces land units was Unmanned Aerial Vehicle Troop (UAV Troop) of ISTAR Company, Task Force Kabul, operating six SAGEM CU-161 Sperwers (Dutch for "Sparrow Hawk"; the ISTAR stood for Intelligence,

Surveillance, Target Acquisition, and Reconnaissance). None of the CU-161s survived the harsh, high-altitude conditions of Kabul.

During 2006-2008(?), Sperwer operations resumed, this time in Kandahar with the new Tactical Unmanned Aerial Vehicle Flight (TUAV Flight) after five more CU-161s had been ordered from France. These were later supplemented by perhaps a dozen more Sperwers from the deactivated Danish ISAF UAV unit. Most of the drones are believed to have eventually also crashed or otherwise sustained damage.

2008 saw the formation of Joint Task Force Afghanistan, Air Wing, also known as "Task Force Silver Dart", to support ISAF Regional Command - South.

The sub-units of Air Wing Kandahar were:

- Canadian Helicopter Force (Afghanistan), with six CH-147D Chinooks, eight CH-146 Griffons, and six Mil Mi-8/17 Hips, leased (as the Contracted Air Transport Unit, before being taken on roster as CH-178s). Because Canada had sold all its Chinooks to the Netherlands in 1991, these new ones had to be purchased from US Army stocks in Afghanistan. Losses there include two Chinooks and one Griffon. CHF(A) was named "Task Force Freedom."

- Tactical Aviation Unit (TAU) with three CC-130 Hercules, known as "Task Force Canuck."

- Tactical UAV Flight had become Canadian Heron UAV Detachment (CHUD), with three(?) IAI Heron MALE UAV (Medium-Altitude Long Endurance Unmanned Aerial Vehicle), the CU-170s, as "Task Force Erebus."

- plus the Theatre Support Element.

JTF(A), AW stood down in August, 2011; but TAU's Hercules operations, which had begun in January 2002, continued into November, 2011.

## CZECH REPUBLIC

In early 2009, a Czech AF helicopter detachment was scheduled for Afghanistan after desert and mountain flight-training elsewhere. The aircraft from 232 Sqdn. are believed to have been one Mil Mi-17 Hip, three Mi-171Shs, and two Mi-24 Hinds. Another report claims that they operated three Mi-17s in Pakitika Province, with a 2011 announcement of a C-295 deployment also. Furthermore, Czech Mi-17s and Mi-24s, six of each, had been reportedly donated to the Afghan National Army Air Corp, guided by a Czech Operational Mentoring and Liaison Team (OMLT). Then the Air Advisor Team (AAT Unit, under Czech ACR Task Force ISAF) trained the Afghan Mi-17 and



Mi-24/35 pilots and ground crew at Kabul Airport as part of KAIA Multi-National Force.

### DENMARK

To support the primary Afghanistan portion of OEF, in March 2002 a RDAF C-130H Hercules (from Eskadrille 721) was sent to Ganci Air Base in Manas, Kyrgyzstan, followed in October by six F-16A (MLU) Falcons (from Eskadrille 730-IRF) as part of a joint Danish/Dutch/Norwegian EPAF (European Participating Air Forces) detachment. Norway departed this force at the end of March 2003, but Denmark and Netherlands continued to September 2003.

Later, at least by 2005, a 721 Esk C-130J Super Hercules was stationed with ISAF in Kandahar. In July, 2008, four RDAF AS550C2 Fennecs were also delivered to Kandahar as Helicopter Detachment 2008 (HelDet 08), which immediately deployed to Camp Bastion, near Lashkar Gar. This was the United Kingdom's main base in Helmand Province. (The Fennecs came from Esk 724 of RDAF's Helicopter Wing.) In July, 2014, three RDAF Augusta-Westland AW101s (EH101 Merlin Mk512s) were detached from Flyverstation Karup's Helicopter Wing to be based at Camp Marmal, Mazar-e Sharif Airfield, ISAF's Regional Command -North HQ in Balkh Province. One of them was damaged in a landing-accident in October.

As indicated in the Canadian section, above, the Danish Army also utilized SAGEM Sperwer UAVs in Kabul, before handing them over to Canadian Forces after February 2005. In 2012, Denmark selected the AeroVironments (AV) Puma AE for its Tactical Unmanned Aerial System (TAC-UAS) in Afghanistan.

RDAF also contributed personnel to the NATO AWACS flights from Mazar-e Sharif.

### FRANCE

Operation "HERACLES" (start of OEF, naval)

Operation "PAMIR" (ISAF and OEF)

The initial French assist to OEF came with their nuclear aircraft carrier *Charles de Gaulle* stationed in the Indian Ocean. Their 2001 Operation "HERACLES" at first used the Super Etendard Modernise (SEM) fighters and Northrup Grumman E-2C Hawkeye early-warning aircraft over Afghanistan. (The carrier's other aircraft consisted of Dassault Rafale multi-role/fighters, Dauphin and Alouette III helicopters, plus Army Pumas.) The *de Gaulle* moved on to South-East Asia at the end of March 2002.

In December 2001, the French Air Force's Dassault Mirage 2000Ds started their Afghan combat missions

from Manas Air Base in Kyrgyzstan. In 2005, from August to November, their "Serpentaire" detachment for Afghan operations was based in Dushanabe, Tajikistan, flying three Mirage 2000Ds, three Mirage F1 CRs, and two C-160 Transalls. Two C-135FR tankers continued to fly out of Manas; by 2009, only one C-135 remained there, now renamed Manas Transit Center (instead of Air Base).

From March 2007, French AF Rafale B dual-seaters flew from Dushanabe alongside French Navy Rafale Ms from the *Charles de Gaulle*, this time in the Arabian Sea (Mission "Agapanthe" for the Navy). A second detachment of six Mirages returned to Dushanabe that year, but in August they started transferring to Kandahar Air Field in Afghanistan. The two Transalls remained in Tajikistan. In February 2008, the Mirage F1 CRs were replaced by Rafale C single-seaters.

In June 2008, three French Navy Super Etendard Modernise (SEMs) replaced the Air Force's Rafales at Kandahar. One Mirage 2000D crashed in May 2011, and the three Mirage F1 CRs were once again replaced by Rafale Cs.

Between November 2008 and June 2012, the French Army in Afghanistan employed SAGEM Sperwer Tactical Unmanned Aerial Vehicles. The 61st Artillery Regiment withdrew them after too many losses and tried to fill in with EADS Drac mini-UAVs. Meanwhile, the French AF deployed three brand new SIDM UAVs to Bagram Air Base in February 2009. (The initials stand for Systeme Interimaire de Drone Moyenne altitude longue endurance; the aircraft was subsequently named the Harfang, for the Canadian Snowy Owl.) In April, one of the Experimental Drone Squadron's Harfangs was damaged, but it was replaced in the summer of 2009.

Three French Army Eurocopter EC665 Tiger HAP attack helicopters were sent to Kabul International Airport (KAIA) in July 2009. There they joined the Army Cougars. (It is not clear if Aerospatiale Gazelles also went earlier, as planned.) During a night operation in February 2011, one of the Tigers crashed. By the end of 2012, the French missions in Afghanistan had concluded.

### GERMANY

While some German forces joined OEF in Afghanistan, the bulk of the nation's contribution was to ISAF, starting in January 2002. In February, the German Air Force commenced operations out of Termez Air Base in Uzbekistan, which served as the regional transfer point for the weekly air-bridge transport (via

Airbus A310-300s) from Cologne-Wahn AB to Kabul International Airport/KAIA (the latter by C-160 Transalls).

Six C-160 Transalls were based at Termez for the Afghan flights, including one (or a seventh one?) specifically for medical evacuations: Einsatzgeschwader Termez, Sanitätsstaffel Termez, AME (Air Medical Evacuation). In Kabul, since April 2002, were three Army Sikorsky CH-53G Sea Stallions, one also specifically medevac-equipped. One of the Heeresfliegerstaffel ISAF's Stallions was lost in a fatal crash in December 2002. After Turkish Black Hawks arrived in Kabul in May 2004, the German helicopters relocated to Termez in June. Three additional CH-53 had already been activated there in February of that year.

Germany also made use of civilian contracted Ilyushin Il-76 Candids and Antonov An-124 Condor/Ruslans. In 2003, KAIA Command was under the GAF.

In April 2007, six Panavia Tornado IDS from the 51st Reconnaissance Wing arrived in northern Afghanistan to form Einsatzgeschwader Mazar-e Sharif of the 13. DEU EinzKtgt ISAF. The Mazar-e Sharif Operational Wing was later (at least by 2013) listed as German Expeditionary Wing Mazar-e Sharif, Regional Command - North (RC(N)), ISAF Joint Command (IJC).

Meanwhile, the German Army Artillery Recon Battery (ArtAufklBtrr) of the Kabul Multi-National Brigade (KMNB) had been flying their EMT LUNA ramp-launched drones in the Capital region. The unit has also been listed as the Artillery Surveillance Battery and Observation Battery, KMNB. (LUNA stood for Luftgestützte Unbemannte Nahaufklärungs Ausstattung.)

In March 2010, the GAF 51st Recon Wing introduced its first Israeli Aircraft Industries Heron 1 UAVs to Afghanistan. At least two aircraft of that type were utilized.

And in December 2012, four Eurocopter Tiger attack helicopters from the Army's 36th Combat Helicopter Regiment arrived in Kabul. These had been configured to the ASGARD standard (Afghan Stabilization German Army Rapid Deployment) and were used for fire support, recon, and escort of transport helicopters.

### **GREECE**

While the Greek contribution to OEF was primarily naval, the Hellenic Air Force provided two C-130 Hercules (presumably for ISAF) in February 2002. Due

to conditions in Kabul at that time, they were based in Karachi, Pakistan. C-130s were also used for the air bridge between Greece and the United Arab Emirates, continuing on to Kabul.

In the scheduled national rotations for managing KAIA, the HAF took its turn from December 2005 to March 2006, and again from April to October of 2010. During at least one of those times they had one C-130 based at Kabul.

When the Greek contingents' mission ended in December 2012, seven HAF officers remained behind to train Afghan pilots/crews on the Aeritalia/Alenia C-27A Spartan aircraft of the AAF.

### **HUNGARY**

It is believed that the Hungarian AF used the Mil Mi-17 Hip, possibly three, as part of that country's several Afghanistan missions. A news report claimed in 2011 that the Mi-17s were being upgraded for that purpose for a 2012 deployment.

Furthermore, the Hungarian AF maintained a series of Air Mentoring Teams (AMTs) to train Afghans on the Afghan Mil Mi-35 Hind E, while actually most of the time they themselves flew operational missions out of Kabul in the AAF helicopters. Some training also took place at Shindand Air Field in Herat Province.

### **INDIA**

As part of OEF, India offered naval assets, along with logistical and medical support. It also reportedly loaned some of its Mi-17 Hips to the anti-Taliban Afghan Northern Alliance.

### **ITALY**

Near the start of Operation "ENDURING FREEDOM" (OEF), four Italian Navy vessels (including the carrier *Garibaldi* with Harrier IIs, SH-3Ds, and AB212s) became active in the Arabian Gulf in November 2001. The Task Group 50.5 AV-8B Plus Harriers flew missions over Afghanistan until the end of January 2002.

For (possibly) OEF, two Italian AF C-130Js were sent to Ganci Air Base at Manas, Kyrgyzstan, in October 2003. They maintained flights between Manas and both Kandahar and Bagram in Afghanistan.

For ISAF, the Italian AF shuttle missions to move troops and equipment into Afghanistan had begun in December 2001. This air bridge, initially with up to ten C-130Js and Boeing 707s, had Muscat, Oman, as its destination before the way-station was established in Abu Dhabi, United Arab Emirates. From there, the AF

detachment Task Force Air (at Al Bateen) used two C-130Hs for two daily flights at first to Bagram Air Field just north of Kabul and later into Kabul itself.

In August 2005, Italian Army Task Force "Eracle" with three CH-47 Chinooks began operations at Forward Support Base Herat (for that autumn's Afghan elections) before redeploying to Kabul in late October. Italian Navy Task Force "Pantera" and Italian AF Task Force "Seagull" flew Agusta Bell AB212 ICO helicopters out of Kabul, relieving each other every six months (as in "Pantera" Aug. '05-May '06, and again Dec. '06-Jun. '07). The Air Force's Task Force "Tigre" with their AB212s also seemed to be in those rotations between 2006 and at least 2008.

The Navy Task Force "Ancora" flew two Sikorsky SH-3D Sea Kings there from 2005 to 2008.

The Italian Army deployment ITALFOR XX (at least) used the AeroVironments RQ-IIA Raven B UAS (Unmanned Aerial System) in their operations in the Musahy Valley outside of Kabul. It is not clear if an APR (Aeromobile s Pilotaggio Remoto) was called for.

In June 2007, the Joint Air Task Force was established at Camp Arena, Herat Province, to manage the Italian aviation elements:

- AF Task Group "Albatros," utilizing C-130Js from June '06 to Sept. '08 and C-27J Spartans from Sept. '08 to Jan. '09. Then perhaps the Hercules returned, for both seen in-country simultaneously. These transports flew from Kabul and various remote locations.

- AF Task Group (no longer Force) "Tigre", with the AB212 ICOs, as mentioned above.

- Navy Task Group (no longer Force) "Pantera", whose AB212s replaced "Tigre" by late 2008.

- Navy Task Group "Shark," with Agusta Westland EH 101 (AW101) helicopters, replaced "Pantera" in October 2010.

- AF Task Group "Devil," with the first detachment of four Panavia Tornado multirole jets arriving in Nov. 2008. These were temporarily based at Camp Devil at Mazar-e Sharif.

- AF Task Group "Black Cats," whose four AMX (ACOL versions) replaced the Tornados at Mazar-e Sharif in November 2009. The AMXs served into perhaps 2014.

- AF Task Group "Astore", flying two General Atomics RQ-1B Predator ("Predator A+") UAVs, was reported to also add the MQ-9A Reaper in 2012.

- Army Task Group "Fenice", operating four CH-47 Chinooks and six A129 Mangusta attack helicopters.

In September 2012, this Army TG left the JATF to operate independently, becoming Task Force "Fenice"

and expanding with the addition of AB205s and with five NHIndustries NH-90s (replacing the CH-47s?), subsequently becoming Aviation Battalion "Fenice".

By late 2013, the Regional Command - West (RC(W)), ISAF Joint Command (IJC), listed the JATF's Task Groups as only "Albatros", "Astore", and "Black Cats", and, separately, Avn. Bn. "Fenice."

In the meantime, the Italian AF Boeing KC-767A tanker/transport had begun operating out of Herat AB in July 2011, arriving via Al Bateen, UAE.

## **KOREA, REPUBLIC OF (South)**

### **Deployment "ASHENA"**

For its second, heavier deployment to Afghanistan, Korea included Sikorsky UH-60 Black Hawk helicopter support. The four Korean UH-60s operated within the US Army 3<sup>rd</sup> Combat Aviation Brigade at Bagram Air Field (AB?) in Parwan Province. Further details are needed.

## **LITHUANIA**

Confirmation is still needed as to what Lithuanian Air Force transport plane, Antonov An-26 Curl or Alenia C-27J Spartan, had been reported in Afghanistan. It seems somewhat unlikely that the aircraft constituted a regular air bridge to the Lithuanian contingent in Ghor Province, located between Kabul and Herat; perhaps it was used for VIP visit(s) to the Lithuanian-led Provincial Reconstruction Team (PRT) there?

The Lithuanian AF also led Air Advisory Team (AAT) for Afghan Mi-17s at Kandahar. This was later listed as an Air Mentoring Team (AMT) of the NATO Training Mission - Afghanistan (NTM-A), supervised by the US Air Force 738th Air Expeditionary Advisory Group (738th AEAG).

## **LUXEMBOURG**

(see also NATO below)

While Luxembourg did contribute a military contingent to ISAF, the aircraft connection is primarily a peripheral/technical one. As NATO's own AWACS fleet is registered in that small nation, in addition to NATO roundels and titles, the planes also carry the Luxembourg registration codes and the national lion emblem.

## **NATO**

The NATO Early Warning and Control Force, a unique "Multinational Air Force," is primarily the E-3A Component with three operational squadrons, a Training

wing (TCA Squadron), and ancillary ground components. At least fifteen Member Nations contribute to the mixed crews. The aircraft, seventeen Boeing E-3A Sentries, based on the Boeing 707 and fitted with AWACS (Airborne Warning and Control System), are registered as Luxembourg aircraft (see above). The Trainer Cargo Aircraft (TCA) is also derived from the Boeing 707. The squadrons, or parts thereof, are based in several countries, always available for instant deployment. (Some other NATO members likewise provide their own supplementary AWACS for missions.)

NATO's AWACS covered the Afghanistan operations from the very start, and in 2011 actually based its Operation "Afghan Assist" craft at Forward Operating Base (FOB) Mazar-e Sharif. That mission ended in September 2014.

### NETHERLANDS

As mentioned under DENMARK, above, the Royal Netherlands Air Force contributed to the OEF EPAF (European Participating Air Forces) with six F-16 MLU Falcons operating out of Ganci Air Base, Manas, Kyrgyzstan, to support missions in the Kabul area in 2002-2003. At that time, the RNLAf also supplied a McDonnell Douglas KDC-10 tanker/transport aircraft and a Lockheed Martin C-130H Hercules in Kyrgyzstan. The KDC-10 had operated out of Al Ueid AB, Qatar, before moving to Manas in October 2002.

From the United Arab Emirates, at Camp Mirage in Dubai, the Dutch joined Canada in the Canadian-Netherlands Combined Air Bridge for regular Hercules shuttle flights into Afghanistan.

The overall ISAF mission was then under joint German/Dutch command (which rotated among different European countries) until NATO itself took over leadership in July 2003.

In March 2004, six RNLAf Boeing AH-64D Apache attack helicopters began ISAF operations out of Kabul International Airport (KAIA) as part of a German Army transport helicopter battalion. One Apache was lost during a mission in August. The Dutch KAIA detachment was withdrawn in March 2005. Also, from February 2005 to April 2006, four Netherlands CH-47D Chinooks had joined OEF in Afghanistan. Two of them were lost during that first year, in July and October.

The Afghan 2004 presidential election period of October to December necessitated additional support, to which Netherlands contributed the (new) ISAF F-16/KDC-10 detachment of six and one aircraft,

respectively, flying out of Manas for three months.

Then, to help safeguard the subsequent local and parliamentary elections in September 2005, a battalion of Dutch Marines was dispatched via chartered aircraft and a RNLAf C-130. (As did many nations, the Netherlands Ministry of Defense contracted for various civilian aircraft, from Canada, Russia, and South Africa to fulfill its regular or temporary requirements with ISAF.) This Election Support Force (ESF) also included a CH-47D. A Dutch Hercules has been reported as operating out of Kandahar Air Field from October 2005 to October 2006. A replacement was sent in April 2007.

Meanwhile, to also partially prepare for that ESF mission as well as the Dutch Provincial Reconstruction Team (PRT), four F-16s had been sent to Kabul in March 2005. In July, they were joined by four Belgian F-16s to form the 1st Netherlands/Belgian European Participating Air Forces Expeditionary Air Wing (1 NLD/BEL EEAW). This Operation "Eastern Eagle" then moved to Bagram Air Field. With the Belgian departure in January 2006, Norway replaced the four F-16s with its own, forming the 1 NLD/NOR EEAW.

Norway's Falcons left in May 2006; and four additional Dutch F-16s arrived in Kabul, all eight relocating in November to Kandahar, where the Dutch Air Task Force (1 (NLD) ATF) had been set up. As one of the Falcons was involved in a fatal crash in August, it is assumed that it was replaced in a timely manner.

The ATF's helicopter component at KAF consisted of six AH-64D Apaches and five Eurocopter AS 532Us Cougar Mk2s. The returning Apaches began operations in April 2006. One was damaged in a runway accident and was replaced from the Netherlands. They redeployed in October to "Kamp Holland" at Tarin Kowt, Uruzgan Province, home of the Dutch ground forces. The attack helicopter detachment was reduced to four in April 2007. In May the Cougars at Kandahar were replaced by three CH-47s, beginning a regular series of alternating Chinook and Cougar deployments, the former used during the hot weather period, May-October, and the latter during the winter, due to extreme weather conditions in Afghanistan.

Dutch forces had also used the SAGEM Sperwer-A delta-wing drones until a planned March 2009 withdrawal. At that time, they were due to be replaced by the Aeronautics Defense Systems (Aeronautics Ltd.) Aerostar TUAV (Tactical Unmanned Air Vehicle System). Perhaps the Sperwers stayed on a bit longer, as four Aerostars actually became operational at Tarin Kowt FOB (forward operating base) in June, remaining

in use until August 2010.

The RNLAf Apaches flew their last mission in November 2010, and the Netherlands Air Task Force (rotations 1 through 25) ended its operations in Afghanistan in July 2014.

### **NEW ZEALAND**

To help with OEF in 2003 (Operation "Tui"), a RNZAF C-130 Hercules was allocated for use around Afghanistan, while a Lockheed P-3K Orion flew maritime interdiction missions in the Arabian Sea and Gulf of Oman. The Hercules originally based in Oman, moved to Manas, Kyrgyzstan, to operate alongside Italian and US C-130s. For rotations of the New Zealand Provincial Reconstruction Team in Bamiyan Province, a Boeing 757 flew personnel into the theater and the C-130 transferred them into Afghanistan, supporting both OEF and ISAF. At one point two Hercules were listed as being in use there.

### **NORWAY**

From April to October 2002, a RNoAF C-130 Hercules was stationed at Manas, Kyrgyzstan, to shuttle Norwegian troops and equipment supporting OEF in Afghanistan.

Norway's European Participating Air Forces (EPAF) OEF contribution of six F-16A MLU Falcons joined those of Denmark and Netherlands in October 2002 at Manas. They flew close-air-support combat missions over Afghanistan. One Norwegian Falcon was damaged in a landing accident in December 2002 and had to be airlifted home from Kyrgyzstan. The RNoAF detachment left at the start of April 2003. (The other two contingents remained for six months longer for the Afghan operations.)

In January 2006, four RNoAF Falcons replaced the Belgian ones at Kabul, forming with the Dutch the 1<sup>st</sup> Netherlands-Norwegian European Participating Air Forces Expeditionary Air Wing F-16 Detachment - ISAF (or 1 (NLD-NOR) EEAW). The Norwegian Operation "Afghan Falcon" served there until May.

At least by 2013, the Norwegian Aeromedical Detachment (NAD) operated three Bell 412 medical evacuation helicopters in Afghanistan. There is some indication that more C-130s were also there, but further details are still needed.

### **POLAND**

Polish ground forces had operated in Afghanistan from the earlier years of OEF and ISAF. The Army's Polish Helicopter Detachment was deployed in July

2008 with four Mil Mi-8/17 Hip transports and four Mil Mi-24 Hind gunships. Based in Ghazni Province in southern Afghanistan, the unit was increased to ten helicopters. However, a Mi-24W crashed in December 2009, and a second one was also destroyed. By September 2010, the Polish government was ordering five new Mi-17s from Russia to add to the Afghan contingent. All these helicopters were from Polish Army Aviation's 56th Combat Helicopter Regiment and were subsequently named the Combat Aviation Group, Polish Task Force, ISAF. The ground force utilized some Aeronautics Defense Systems Orbiter Mini drones, and in mid-2010 it added the same company's Aerostar TUAV (Tactical Unmanned Air Vehicle System).

The Polish Air Force operated at least one C-130E Hercules in Afghanistan, as one was reported damaged there.

### **PORTUGAL**

A Portuguese Air Force C-130 detachment (one aircraft) was based in Karachi, Pakistan, for Afghan missions between April and July of 2002. It was paired with a Belgian Hercules, both under United Kingdom/ISAF supervision.

From July 2004 to July 2005, a 501 Squadron C-130H was based in Kabul as part of the KAIA Multi-National Force. In August 2005, it was Portuguese Air Force's turn to take command of KAIA for three months, but without the Hercules.

The third deployment of the C-130H was from August to December in 2008, again at Kabul. The Air Force also fielded Advisor Teams, including one for the Afghan Air Force Academy.

### **ROMANIA**

Romanian contingents were flown to Afghanistan in two stages on C-130 Hercules (more than one?) in March of 2006. On the last day of that month, the Romanian Air Force took over KAIA command from the Greek Air Force, serving in that capacity until August 2006. Further aircraft use is unclear at this time.

### **SINGAPORE**

Singapore Armed Forces Afghanistan detachments had served in various capacities since 2007. In August 2010, the new Unmanned Aerial Vehicle (UAV) Task Group replaced the Netherlands Aerostar contingent at Multi-National Base Tarn Kowt in Uruzgan Province. The SAF UAV Task Group utilized the Israeli Aircraft Industries IAI/Malat Searcher II. Their mission was

extended to at least the end of 2011.

## **SPAIN**

The Spanish Air Force "Geminis" Detachment flew C-130 Hercules transports out of Manas AB, Kyrgyzstan, in 2002-2003 to support the Afghan portion of OEF. (Their Hercules are nicknamed "Dumbo".) Likewise for OEF, the Spanish Navy deployed Sikorsky SH-60B Sea Hawks from the 10th Aircraft Squadron, most likely from a frigate in the Arabian Sea.

For ISAF, the "Mizar" Detachment, originally based at Manas before moving to Herat AB, Afghanistan, operated one C-130H (rotated at regular intervals) into 2014. Earlier, three Hercules were listed as in use. "Alcor" Detachment flew EADS-CASA 295/Airbus Military CN295Ms from Camp Arena at Forward Support Base (FSB) Herat from 2007 to 2011.

Also based at Camp Arena were the Army Aviation CH-47D Chinooks of ASPUHEL (Afghanistan Spanish Helicopter Unit), complemented by AS532UC Cougars for MEDEVAC duties. Four Cougars were sent in August 2004 to Kabul (KAIA), transferred to Mazar-e Sharif for the Afghan elections before returning to Kabul. It is not quite clear if they were a regular part of ASPUHEL or a separate "election" deployment as with some other ISAF contributors. In August of 2005, one Cougar was involved in a fatal crash and another was damaged. ASPUHEL is believed to have been operational from May 2005 to October 2013. However, there is a slight indication that four Super Pumas had been already active with ISAF as early as 2002.

At the same time as the Army's ASPUHEL, the Air Force HELISAF flew Aerospatiale SA 330 Pumas and SA 332 Super Pumas also for MEDEVAC. These could possibly have operated from June 2005 to November 2013.

Spanish Army drone missions were conducted by the PASI Unit (Unidad Plataforma Autonoma Sensorizada de Inteligencia) of 1st RINT (Regimiento de Inteligencia No 1) at Forward Support Base (FSB) Herat. Activated in April 2008, five Israeli Aerospace Industries (IAI) Searcher MkIIIJ aircraft (nicknamed "Armadillo") began supporting the Spanish ASPFOR (Afghanistan Spanish Forces) contingents in Regional Command - West (RC(W)). One Searcher was lost in 2008 and another in 2010, but were soon replaced.

ASPFOR contracted for civilian-operated Boeing ScanEagle UAVs between December 2012 and November 2013. These were used primarily for one provincial support base (PSB) contingent. Meanwhile, the Spanish Air Force managed AeroVironment RQ-11

Raven mini-drones in Afghanistan. From February 2010, the teams were attached to various ASPFOR units.

The Air Force had also taken its turns at KAIA command in Kabul.

## **SWEDEN**

At least one Swedish Air Force C-130H Hercules operated from Afghanistan before moving its base to "Camp Nordenskjold" at Termez AB in Uzbekistan. It still flew into Afghanistan regularly.

In January 2011, a Swedish Air Element (SAE ISAF MEDEVAC) was ordered to Afghanistan. Two Eurocopter AS 332 Super Pumas of the medical evacuation unit arrived at Camp Marmal, Mazar-e Sharif, in March. At the end of March 2013, they were replaced by four Sikorsky UH-60M Black Hawks (as SAE ISAF UH-60), which served until May of 2014.

Swedish ground forces were also supported by AeroVironment RQ-20 Puma AE TAC-UAS (All Environment Tactical Unmanned Aerial System) and RQ-12 Wasp Micro Air Vehicle (MAV) mini-drones.

A July 2013 listing shows the SAE as Swedish Air Wing, Regional Command - North (RC(N)), ISAF Joint Command (IJC).

## **TAJIKISTAN**

Confusion existed over ownership of the Mil Mi-8MTV involved in a fatal crash in Afghanistan's Zabul Province in February 2012. The Supreme Group/Central Asian Aviation Services claimed it was one of its civil craft, while the Tajikistan Air Force & Air Defense insisted it was one of theirs, crewed by Tajik AF officers. Could this be a case of "civil" aircraft/companies actually being run by the military?

## **TURKEY**

In June of 2002, the Turkish Air Force took its ISAF turn at commanding Kabul International Airport (KAIA) as well as the general Kabul area. It managed the air bridge for Turkish and other troops. On hand were at least two Turkish AF C-130 Hercules transports.

At the end of May 2004, three Turkish UH-60 Black Hawks arrived at Kabul to join the Dutch and German Kabul Helicopter Unit. Two of them were from the Air Force and one from the Gendarmerie. (All three were similarly camouflaged, so it is not completely clear if "Kuvvetleri" and "Jandarma" titles differentiated their origins.) They were delivered by two chartered Antonov An-124s, while the personnel



came in a Turkish AF Hercules. Another UH-60, possibly on rotation, was delivered by a Globemaster to Kabul in Apr. 2007, and a Black Hawk crashed, taking 12 Turkish lives, was reported in Mar. 2012.

(Not part of ISAF operations, a Turkish AF Airbus A400M Atlas was seen at KAIA in October 2014, supporting the state visit of the Turkish president to the new Afghan president.)

### **UNITED ARAB EMIRATES**

The UAE Air Force & Air Defense's plan to deploy Unmanned Aerial Vehicles to Afghanistan in 2004 was apparently canceled. However, by 2009 three General Dynamics Seeker II UAS (Unmanned Aircraft System) drones had been sent. These operated in Helmand Province, supporting the United Kingdom ISAF missions there.

In October 2011, an air ambulance version of an Emirates Air Force Piaggio Avanti II was photographed at Kandahar Air Field.

### **UNITED KINGDOM**

Operation "FINGAL" (initial ISAF)

Operation "HERRICK" (rest of ISAF and OEF)

Flying out of Middle-East bases, the Royal Air Force contributed to OEF's initial Afghan-directed mission with Canberra PR.9s, NIMROD R.1s, VC-10 tankers, Boeing E-3D Sentry (AWACS), and Lockheed Tristars. In November 2001, RAF Hercules C.1s landed British elite forces at the newly captured Bagram Air Base just north of Kabul.

When ISAF was established the following month, the UK took up one of the major roles. British troops were flown in by Hercules, VC-10 transports, Boeing C-17 Globemasters, Lockheed Tristars, and chartered civilian Ilyushin Il-76s and Antonov An-124s. Some of these aircraft also formed the regular air-bridge shuttle flights later. By this time, limited space at Kabul Airport was becoming available, too. For direct support of UK ground forces, a Westland Puma HC.1 and two Boeing Chinook HC.2s also arrived.

In the second half of 2004, UK's Joint Force Harrier was created; it was based at Kandahar Air Field in southern Afghanistan. Initially flying six BAE Systems Harrier GR7As; it later received GR9s. The RAF personnel were rotated with those from Royal Navy

squadrons. One aircraft was destroyed and one damaged. In 2009, the Harriers were replaced by RAF Tornado GR4s (as TGRF, or Tornado GR Force), the last eight of which were finally withdrawn at the end of 2014.

The RAF Chinook Force eventually numbered eight helicopters. The C-130 Flight had its first J-model Hercules arrive at Kandahar AF in January 2005. By April 2006, the Flight consisted of two C-130Js and two C-130Ks. Furthermore, a "mysterious" RAF Special Forces Hercules crashed and was destroyed in May 2006.

At least from 2006, Britain also maintained the Joint Helicopter Force (Afghanistan) (JHF(A)), from January 2009 as part the newly-created tri-service Joint Aviation Group (JAG), working under the USMC 3rd Marine Aircraft Wing (Forward). Besides the components and rotations from UK's Navy, Army, Marines, and Air Force, JHF(A) command apparently also made use of, or coordinated with, personnel from the air forces of Australia, Canada, Denmark, and New Zealand. Among JHF(A) aircraft, mostly based at Camp Bastion, were Army Lynxes and Apaches, Air Force Chinooks and Merlins, Navy Commando Sea Kings, and Lynxes.

With the June 2006 ending of the Canberra PR missions, part of the reconnaissance need was filled by the introduction of RAF drones: General Atomics M/RQ-1 Predator and MQ-9 Reaper (armed Predator B) aircraft were subsequently based at Kandahar Air Field. Elbit Hermes 450 UAVs were likewise used. In August 2010, the Royal Army deployed the small Lockheed Martin Desert Hawk III drones in Afghanistan.

British Forces Afghanistan (Air) apparently did not have the Helicopter Force (JHF(A)) as part of the Expeditionary Air Wing. As Operation "HERRICK" dealt with both ISAF and OEF, at times the aircraft allocations were specifically divided. One example was the Apache attack helicopter deployment to Helmand Province in May of 2006: four were assigned to support OEF and four to ISAF.

Added to air-bridge duties in November 2013, two new Airbus A330 Voyagers began operating between Helmand's Camp Bastion (by then the major British base in Afghanistan) and the UK.

Ted Koppel (SAFCH #118), USA.

Part 2 of this article, "ISAF Emblems and Badges", will appear in the next issue of SAFO.



**Uganda Mi-24:** Note the unusual roundel on this one. It's from the center of the Ugandan flag, a variation on their standard roundel. From <http://forum.keypublishing.com>.



**PNG Bell 212:** A rather unusual shot of a PNG Bell 212. Note the non-standard Defence Force titling surrounding the roundel. From <http://forum.keypublishing.com>



**Hutt River Cessna 182:** This Cessna 182 serves in the Royal Hutt River Defence Force (RHRDF), founded by virtue of the Royal Hutt River Defence Force Act of 1988. The Principality of Hutt River previously known as the Hutt River Province, is a micro-nation in Australia. The principality claims to be an independent sovereign state and to have achieved legal status on 21 April 1970, although it remains unrecognized by Australia. From [www.jetphotos.net](http://www.jetphotos.net), via Lachland Brendan.



**Kazakhstan UH-1H:** Thirty years ago this image would have seemed unathomable. Yet now, we have this image of a UH-1H from Kazakhstan, supplied by the United States. Times have certainly changed. The Kazakhstan army uses it for personnel and materials transport as well as in search and rescue operations. From [www.airliners.net](http://www.airliners.net).





**Tanzania K-8:** This gaudy Tanzanian K-8 Karakorum features an unusual air force roundel on its tail. If anybody has a good close-up please share! From <http://forum.keypublishing.com>.



**Air Tigers Zlin Z-143:** The Liberation Tigers of Tamil Eelam (commonly known as the LTTE or the Tamil Tigers) was a militant organisation that was based in northern Sri Lanka. Founded in May 1976 by Velupillai Prabhakaran, it waged a secessionist nationalist insurgency to create an independent state of Tamil Eelam in the north and east of Sri Lanka for Tamil people. This Zlin Z-143 was part of their small Air Tigers air component. Note the "Sky Tigers" titling on the fuselage. From <http://lankadailynews.com>.



**Cameroon BIR Bell 412:** This Cameroonian Bell 412 features the insignia of their BIR, which is deployed as a rapid response brigade, primarily in the fight against Boko Haram terrorists from neighboring Nigeria. From <http://forum.keypublishing.com>.



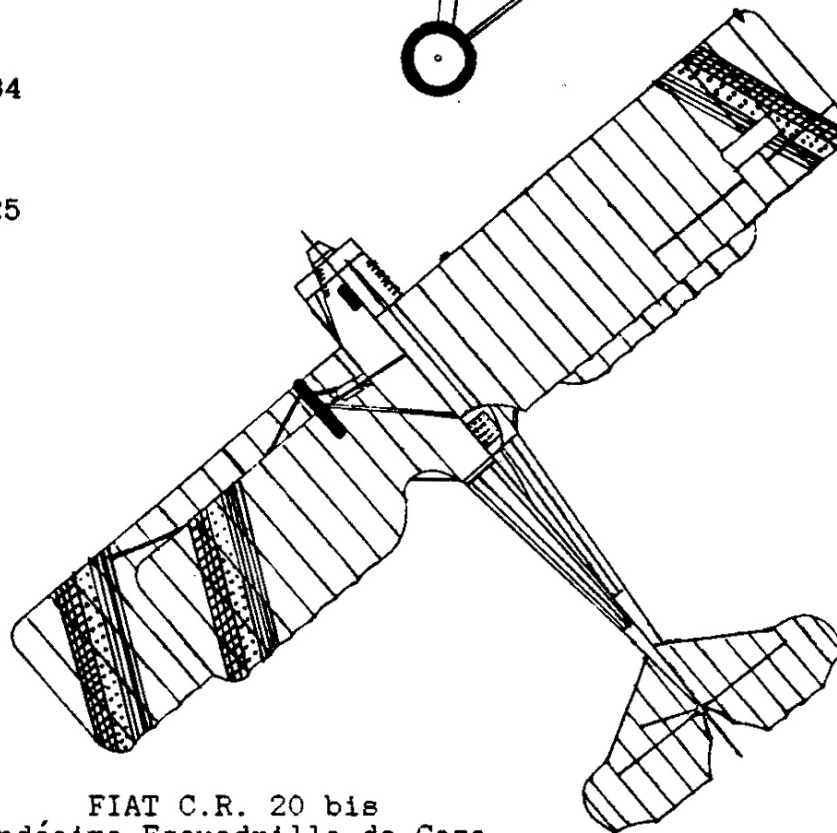
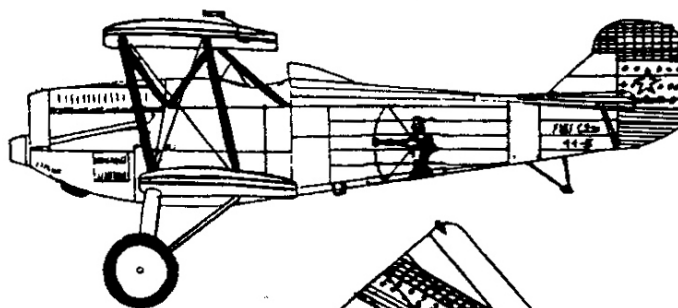
**Mexico Northrop C-125:** The Northrop YC-125 Raider was a 1940s American three-engine STOL utility transport. The aircraft had good performance, but there was little interest due to the availability of cheap war surplus aircraft. A rather rare image of this unusual and uncommon tri-motor transport in Mexican markings. From <http://forum.keypublishing.com>.

□ HU056

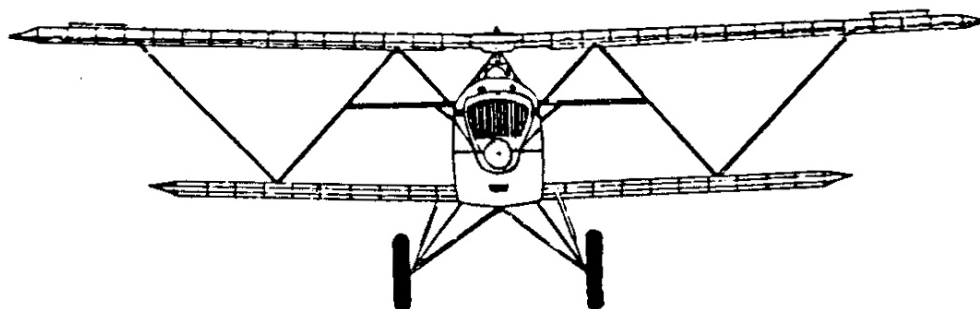
▣ HU060

▤ HU034

▥ HU025



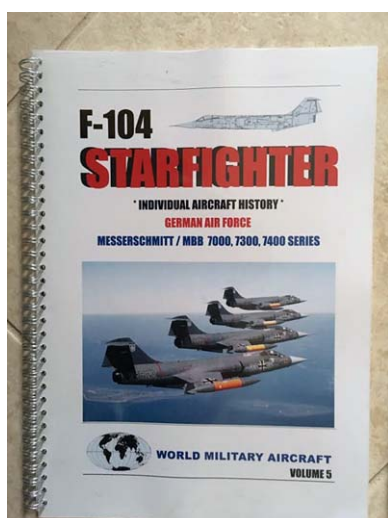
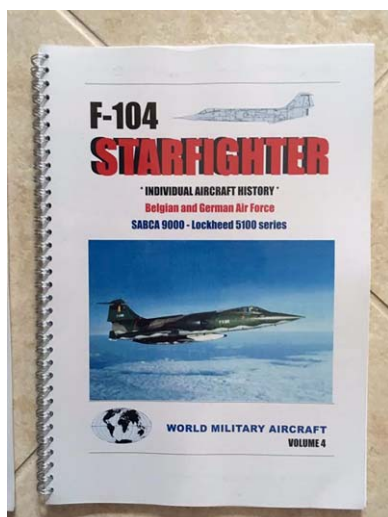
FIAT C.R. 20 bis  
Undécima Escuadrilla de Caza  
"Los Indios"  
ARMA AEREA PARAGUAYA, 1933-1941



This drawing originally appeared in April 1995 issue of *Modelo Terapo*, and is reproduced here with the permission of their editor Antonio Sapienza.

The story of the CR.20 in Paraguay, along with the service of the Fiat fighter with the other small air forces will appear in the January 2017 issue of SAFO.





**F-104 Starfighter, Individual Aircraft History, Vol 1 thru. Vol 5**, by Hans Koning. Paperback A4 size. Softcover. Ring binding. Published by World Military Aircraft (Netherlands). About 27.5 Euros each Volume.

This is a series of books documenting each individual F-104s built. It is written in English and each F-104 has a 3-4 line description of basic data such as the first flight date, delivery date, country assigned, serials, squadron code, and its disposition. Almost every F-104 has a color picture accompanying the description. (There are a few black and white photos but most are color photos)

It is a soft cover book with ring binding. Since the book is published in Europe, it is sold in 2 different sizes: A4 and A5. The A4 size is close to the 8 X

11 size book published in the US but not quite exactly the same. The exact dimensions are 8.27 X 11.69 inches. A5 size is essentially half of the A5 size. It is a minor inconvenience for readers in the US in putting the book in the bookcase or filing it in a binder with these odd dimensions.

The writer plans to cover all the F-104s in 10 volumes and 5 volumes have been published (by August 2016).

Vol. 1 MAP Deliveries – Lockheed 4000/5500 – Canadair 6000 series (83 pages)

Vol. 2 Canadian Air Force – Canadair 1000 – Lockheed 5300 series (83 pages)

Vol. 3 German & Netherlands Air Force – Fokker 8000 – Lockheed 5800 series (125 pages)

Vol. 4 Belgian & German Air Force – SABCA 9000 – Lockheed 5100 series (61 pages)

Vol. 5 German Air Force – Messerschmitt/MBB 7000, 7300, 7400 series (79 pages)

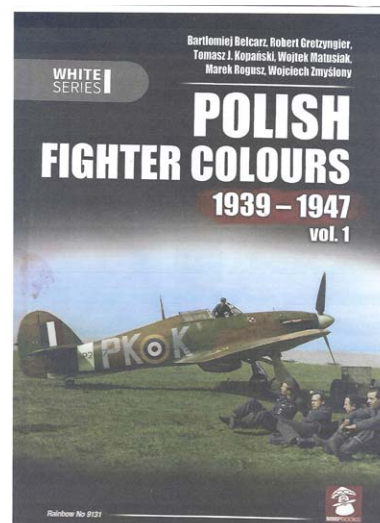
Vol. 6 thru Vol. 10 are yet to be published.

Each book has an “Introduction” section which covers a brief but precise history of the batch of F-104s covered followed by description of countries operating these F-104s. The quality of paper is good and so is the printing. Quality of the photos is very good though not the best.

This is a book for serious Starfighter enthusiasts who want to know down to the individual aircraft level all the Starfighters built. I have read most other F-104 Starfighter books on the market. Most repeat information from previously-published Starfighter books or from the internet without doing much careful cross-checking. As a result, most of the previous information relating to the subsequent transfer of second hand F-104s to countries like Turkey, Greece, and Taiwan is incorrect. The author of this series has avoided this mistake.

One suggestion I would like to make to the author to add a glossary section so readers can find what THK, AWX, MTT, etc. stands for. (On the other hand, a Starfighter fan should already know these acronyms.)

The price of each volume (in A4 size) is about 27.5 Euros (not including postage). If anyone is interested in this series of Starfighter books, please contact Mr. Hans Koning directly for more details. His e-mail address is [hanskoning47@ziggo.nl](mailto:hanskoning47@ziggo.nl). W. Yip (1421), USA.



**Polish Fighter Colours 1939-1947, Volume 1**, by Bartłomiej Bęćcarz and many others. Published by MMP/Stratus. 280 A4 pages. £40.00.

The latest in the continuing line of Fighter Colours from MMP is a little different from preceding volumes in that the after the invasion of 1939 many Poles fled to France and the UK to continue the fight and this is reflected in this, the first of two volumes covering the period from 1939 to 1943. The next volume will cover the rest of the association with the RAF and the USAAF. As usual with this series, there are plenty of new and rare photos and this is reflected in the colour artwork.

After a short introduction, there is a chapter on the Organization of the Polish fighter aviation to 1939, followed by a chapter on Camouflage and Markings, a subject that caused the authors a considerable amount of problems as most of the records have vanished. They have, however, reprinted a colour chart from the Polish Nobile company showing the colour used. It is a pity they didn't print it in a larger format as a magnifying glass is

needed to read the colour names on the chart. We must be thankful for this much.

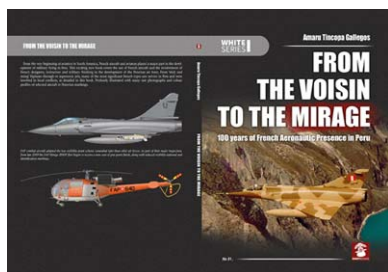
After this, the book commence with the individual aircraft types, which as usual are covered in a short history section followed by a colours section. The aircraft covered are: PWS-10 (1); PZL P.7a (9); and PZL P.11a/c (25). The number in parentheses is the number of colour drawings.

The book then moves on to Polish units fighting alongside the French Air Force and their camouflage and markings, another difficult subject since all French fighter had appear to have different colour schemes! The authors have in many cases tied in serial numbers with individual pilots. The aircraft covered are: Bleriot-Spad 510 (1); Morane Saulnier MS.406 (9); Bloch MB.151 & 152 (7); Caudron-Renault CR.714 (5); Curtiss Hawk H-75A (2); Dewoitine D.520 (1); Koohoven FK.58 (3); and Dewoitine D.501/510 (0).

The next section covers the commencement of Polish involvement with the Royal Air Force including aircraft at Operational Conversion Units. As the authors point out, Poles fought not only from the UK, but also in North Africa. The camouflage and markings largely followed standard RAF schemes, but some individual variations are noted. Aircraft covered are: Hurricane I, II, and IV (23) and Spitfire I, II, and V (19).

To sum up: Yet again, as far as I am concerned, another excellent addition to this series. There is even a colour scheme for a Hurricane that was based five miles from my house. I'll have to make a model of this one.

Malcolm Barratt (#1716), UK.



**From the Voisin to the Mirage – 100 years of French Aeronautic Presence**

**in Peru**, by Amaru Tincopa Gallegos. Paperback. 112 pages. Published by Mushroom Model Publications.

This is yet another book chronicling worldwide interest in aviation from its early beginnings and is particularly interesting as Peru is many miles from the centres of aircraft experiments and development. However French manufacturers were quick to see the potential of this market and this is their story.

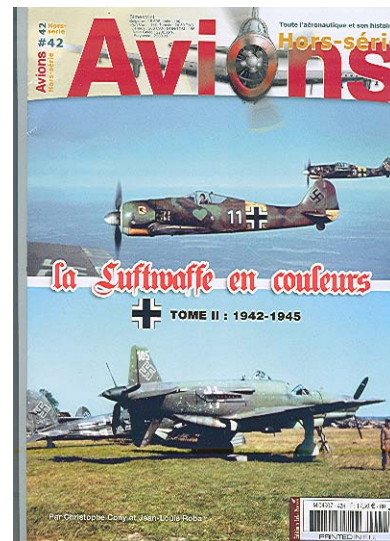
The first machine to be used by a Peruvian aviator was the Bleriot XI, followed by the Henri Farman II. After that came well known military types, such as the Caudron G.3, Salmson 2A.2, Morane-Saulnier MS.29C.I, MS.35ET.2 and the Farman F60 Torp Goliath among others.

In the interwar there was an arms race between Peru and Colombia. This resulted in the purchase of more modern aircraft, including the Hanriot H.438, a number of Morane-Saulnier types, the Potez 390A.2 and 391A.2bis, plus the relatively modern Nieuport-Delage NiD.121CI. These chapters contain a good amount of descriptive material and are lavishly illustrated.

In chapters three we move into the jet age with the Dassault Mirage 5P/5DP. As the first aircraft were delivered in recent times, in June 1968, there is much more information available with operational data and even weapons and equipment. This section concludes with the Mirage 2000 and with the availability of colour photographs we get a huge numbers of images in that medium. The book ends with a survey of the French helicopters in use in the Peruvian Air Force.

I know a modeller who first investigates the possibility of unusual markings before buying a kit and I am sure he is not the only one. This is yet one more chapter in the encyclopedia of aviation from this top class publisher and arguably a unique one.

[Ed: this review by IPMS member Ernie Lee is reprinted from *Scale Aircraft Modelling* for August 2016. Details of price, etc. at [www.mmpbooks.biz](http://www.mmpbooks.biz).]



**La Luftwaffe en Couleurs, Tome II: 1942-1945**, by Christophe Cony & Jean-Louis Roba. Avions Hors-Serie #42. 120 A-4 pages with 400 photos. Soft cover. Les Éditions Lela Presse. [www.avions-bateaux.com](http://www.avions-bateaux.com). €17.50.

This is the second of Lela Presse's books on color photos of Luftwaffe aviation in WWII. (The first volume was reviewed in SAFO #154 October 2015.) This second volume cover the period from 1942 to 1945.

The book begins with a 4-page "Errata et Addenda au Premier Volume". This is followed by five chapters: "X - Face au Rouleau-Compresseur Soviétique" (30 pages). "XI - Le Front Méditerranéen". (21 pages). "XII - À L'Ouest d'un Débarquement À l'Autre" (23 pages) "XIII - Unités de Seconde Ligne et Formations Diverses" (11 pages). "XIV - La Chute de L'Aigle" (22 pages).

The has no text, but the captions of the photos (in French) are comprehensive. The reproduction of the photos is outstanding, and the colors are amazingly accurate considering the age of the photos.

The review copy of this book (as well as the first volume) is available from the SAFCH Sales Service for \$17.50 each plus postage and packing.





"I would like to make a few comments to Ley Reynolds' article on the Armstrong Witworth AW 16 in China in SAFO #157. The total number mentioned is probably correct (11+6), with three delivered in 1931, twelve in 1932 and two in 1933. The first batches went to the Canton Air Force, which probably received nine. Then came the Kwangsi Air Force. They got two, but as they later had three on their inventory they must have received one more at a later date. Three were purchased by Honan and presented to the Nanking Air Force, and the final three seems to have been sold to Nanking as well.

"I am quite certain that the profile at the bottom of page 18 is of a Canton Air Force aircraft, and not Nanking. The roundel on the rudder (it should have 12 points) is typical for Canton."  
Lennart Andersson (#68), Sweden.

"Re #157: I very much enjoyed the item on the Nancu, which looks like a cross between a Mosquito and Hornet with a P-80 canopy thrown in for good measure. I suppose if the UK could have a Cod War with Iceland, a Tuna War was bound to break out somewhere. Thanks to Frits Gerdessen for the Vreeburg A2M. It looks remarkably like the Martin biplane bomber of the same period. [Ed: The Martin MB.2 was much bigger with a wingspan of 23m vs. 14m for the Vreeburg.]

"I bought *Blue Skies Orange Wings* but haven't yet had time to read it. However, one of the photo captions need updating. The BAT Bantam 'K123' is no longer at the Aviodrome; it is now in highly exalted company at the Rijksmuseum in Amsterdam in a gallery devoted to Dutch technical achievements in the 20<sup>th</sup> Century."  
Malcolm Barratt (#1715), UK.

"In the July SAFO, two words ("outer border") seem to have disappeared from the caption for my Phil. A.F. L-5 Sentinel.. As I was pasting up some of the unfinished drawings from long ago, I cut up the color description to reposition it closer to the national insigne. The glue must have weakened on the final piece, causing it to come loose on the way to be photocopied. The

caption should read, "White & blue with red central diamond outer border." Sorry!

"This may be the appropriate juncture to point out some errors or omissions in the second edition of *Military Aircraft Insignia of the World* (Cochrane and Elliott). With the incredible amount of illustrated information presented, it is understandable that some variations had to be unrecorded. Some examples are:

Ethiopia: Not shown is the mid-1930s fuselage insigne, the large national seal of the Lion of Judah, which had been photographed on at least three different types of military aircraft. Text also states that no fin- or rudder-flash was worn post-war, while a fin-flash did appear in mid-1940s.

Mali: Missing is the original roundel with the green outer ring, used for many years.

Mauritania: The roundel shape (with great variations in the star-and-crescent thereon) appeared before "the late 1980s." Not illustrated are the rectangular variations and the square one, both with or without borders, although the latter is mentioned in the text.

Morocco: Missing is the color-variation of the roundel.

Nicaragua: The insigne containing the yellow wings and the name of the country should have the initials "FAN" (for Nicaraguan Air Force) instead of "FAM" (Mexican A.F.??).

Senegal: Variations with square-ended bars instead of angled or even separated from the disc are not shown. Too minor?

U.S.A.: Rather inexplicable is the omission of the blue surround-arcs above and below the central disc. After the white bars were added to the disc, then a red border over all, the change from the red to a blue border made it look as if the white bars were indented into the disc. As shown in the book, that blue border area is missing from the blue disc.

Vietnam (South): The illustration omits completely the red surround to the central disc (although the text refers to it, but only partially). Out of the many scores of VNAF photos on hand, some with varying widths of the red ring, none have been seen without it as shown in the book.

(By the way, most of the above emblems have already been illustrated correctly in SAFO).

"These comments have not been intended to take anything away from a truly magnificent work by Cochrane and Elliott, but only to express some curiosity about a few lapses. As for the first edition of *Military Aircraft Insignia of the World*, the earlier omissions and errors were reviewed by Leif Hellstrom in SAFO No. 87 (Oct. 1998).  
Ted Koppel (#118), USA."

"Many people have contacted me expressing interest in the military events in this eastern Ukraine (Donbass area). At our city bookstores, I have found three new books that can satisfy the interest of researchers of this theme. Let me briefly introduce them here:

(1) "Airport: Defenders" describes the Donetsk airport with about 150-200 pages with many color photos taken in the zone of the conflict. The photos are very accurate and clear, showing combat forces in positions, weapon, general combat situation, and so on.

(2) "Maydan of Spirit". Maydan is the big central square in Kiev where all those tragic events took place.

(3) "Undeclared War" a hardbound book with b&w photos and about 300-400 (or even more) pages.

"All the books contain text in the Ukrainian language. (My translation service might be used - it's inexpensive.) Price of each book is 65 US dollars (including postal service).

"If anyone is interested in buying these books, just let me know as soon as possible. Payment can be made by Western Union or Moneygram. (I will give you my full name and exact home address).

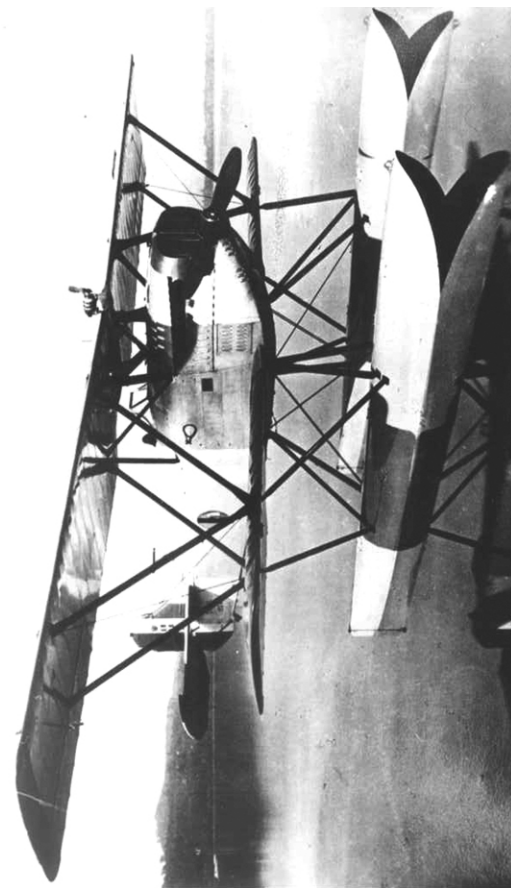
"If you agree, don't send money first. I will have to go to the bookstore to see if they are still available and put them aside.

"I can also offer these books in exchange for two aircraft model kits that I need (1/72-scale Shackleton and Sea Vixen)."

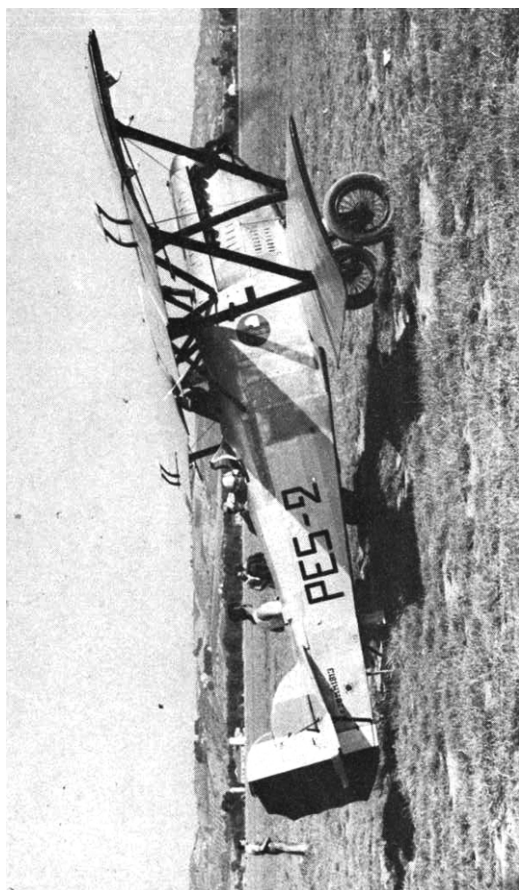
Igor Gordelianov, (#1066), Ukraine. e-mail: igor\_gordelianow@yahoo.com or i\_gord@mail.ru.



The markings carried by the CR.20 of 79<sup>a</sup> Squadriglia during maneuvers consisted of a light blue stars on the fuselage.  
(via Roberto Gentilli)



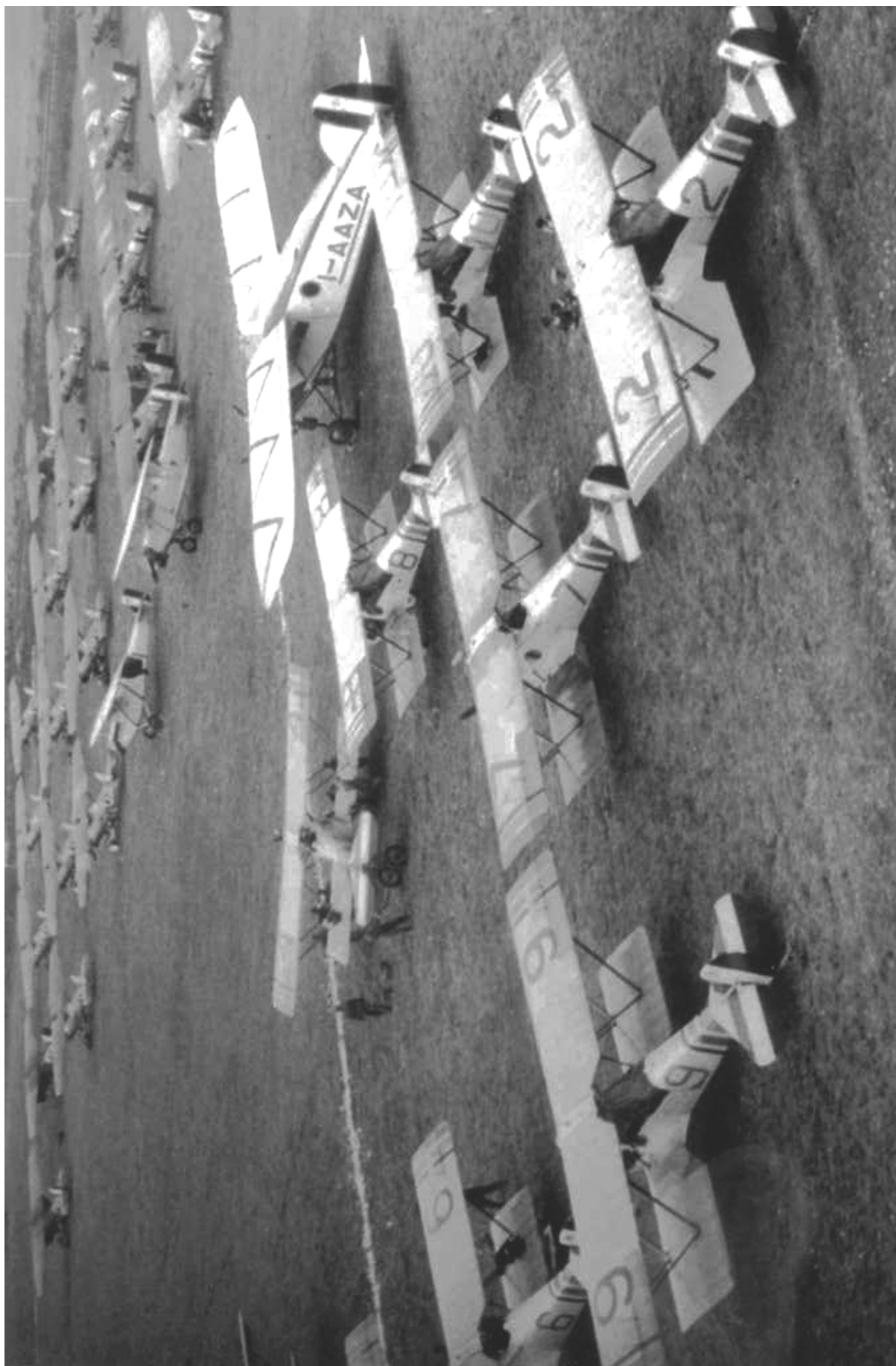
The forty six CR.20 equipped with metal floats by CMASA (Costruzioni Meccaniche Aeronautiche SA) were designated CR.20 Idro.



Two-seat Fiat C.R.20bis MM1813 serving with the Scuola Caccia at Pescara. Note the enlarged fin and the Handley-Page leading-edge wing slats. (via Roberto Gentilli)



The CR Asso was powered by a 450 hp Italian-built Isotta-Fraschini Asso air-cooled in-line engine.



Fiat CR.20 bis of the 2° Stormo at the big reunion of airplanes at Poggio Renatico airfield after the air maneuvers, August 1931. In the background one can see OFM Ro.1, Ansaldo A.120 and Ansaldo AC.3 and Caproni Ca.101 I-AAZA assigned to the Air Force Staff, and belonging to the Ministry of Aviation. The fighters show the special colored bands applied to the planes taking part in the exercise.

Photo via Paolo Varriale. Caption supplied by Roberto Gentilli.